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Original Communications

SOME OBSERVATION OF THE NON-SURGICAL DRAINAGE OF PATHOLOGIC GALL-BLADDERS.

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Patients with pathologic gall-bladders, like the poor, are always with us. Chronic infections of varying etiology, resulting in many forms of illness and physical discomfort are constantly claiming our attention, and seeking relief at our hands. Some of these pathologic gall-bladders, especially cholelithiasis, would appear frankly surgical, and many instances can be relieved only by that means. However, surgery of the gall-bladder tract is not always successful, as many surgeons will admit. Mayo's statistics show that 15 per cent of operative cases are failures. Then we must consider the end-results after cholecystectomy and cholecystotomy. The surgeon dismisses the case after a necessary rest in the hospital, a period of dietetic quiet to the digestive tract and all the psychic stimuli that accompany a surgical operation. For a while all is well; then come the "echoes," not always brought to the surgeon, but more often to the gastroenterologist or the internist. Recurrences of the original symptoms, plus adhesions in the right upper quadrant of the abdomen are quite common, and in the meanwhile the unfortunate patient is loath to again invoke the knife. Any method, therefore, which holds out reasonable hope of benefiting such conditions by non-surgical means is necessarily of interest.

In April, 1917, Meltzer published as a footnote to an article the following:

"In experimenting with magnesium sulphate, I observed that the local application of a 25 per cent solution of the salt on the mucosa of the duodenum caused a complete local relaxation of the intestinal wall. It does not exert such an effect when the salt is administered by the mouth, that is, when it has to pass through the stomach before it reaches the intestines. The duodenal tube, however, apparently has reached an efficient practical stage. I make, therefore, to test in jaudice and biliary colic the local application of a 25 per cent solution of magnesium sulphate by means of the duodenal tube. It may relax the sphincter of the common duct permit the ejection of bile, and perhaps, even permit the removal of a calculus of moderate size wedged in the duct in front of the papilla of Vater. Twenty c. c. of the solution as a dose for an adult will bring no harm. The procedure could be developed into a practical useful method."

Meltzer further elucidated his theory of contrary innervation as applied to the gall-bladder and sphincter muscle of Oddi, that is, when the gall-bladder contracts, the sphincter muscle opens up, and vice versa.

This theory, with its contained possibilities, caught the attention of several clinicians, among the first being Dr. B. B. Vincent Lyon, of Philadelphia, who conducted numerous experiments along this line. In a recent paper he writes: "I have become more and more convinced of the practical ease with which both the normal and the pathologic biliary apparatus can be drained of its contents, with certain exceptions and within certain limitations. Further than this, I believe it possible to segregate and study bile obtained from the

duodenum, from the bile ducts, from the gall-bladder and from the liver. I do not mean to infer that this segregation of bile can be made so sharply that it can be said positively that any given sample is derived exclusively from the bile ducts or from the gall-bladder or from the liver, but segregated to the extent that it is possible to infer that the larger amount of the various types of bile recovered during a biliary tap is being drained from the ducts, from the gall-bladder or from the liver. If this much is admissible, I believe it possible by cytologic, cultural and chemical studies of these various portions of segregated bile to make certain inferential diagnostic deductions as to the condition of health—physiologic or otherwise—or disease within those ducts, that gall-bladder or that liver."

Beyond the diagnostic possibilities embraced in this theory, there open up therapeutic possibilities most alluring to contemplate; and the results attained up to the present are encouraging.

In making duodenal taps, the method which we have followed, with certain modifications, adopted from time to time is as follows:

The patient comes (best in the early morning hours) with an absolutely empty stomach. The mouth should be rinsed, either with plain water or a solution of potassium permanganate. A sterile duodenal tube, fitted with a metal tip of fairly good size is passed into the stomach. At present we are using the Lyon tip, and find it quite satisfactory. After introducing the tube about twenty-four or twenty-six inches, the patient lies on the right side, and is made comfortable, for the seance sometimes lasts several hours. While waiting for the tube to enter the duodenum, warm water is frequently injected into the stomach for the double purpose of washing out that viscus and stiumlating peristaltic action. The tube generally enters the duodenum in from fifteen minutes to an hour, though we have had one patient who required more time; and in several it has entered in eight or ten minutes. The fluid running from or being ejected from the tube while it is in the stomach shows but little viscidity and is generally acid in reaction. When the tube enters the duodenum, this fluid assumes a decidedly viscid appearance, and is either neutral or alkaline in reaction. In a few instances we have noted yellow bile flowing before any magnesium sulphate was injected, but usually none appears until the solution of this salt is applied to the duodenal mucosa. Difficulty occasionally is encountered in entering the duodenum because of vagotonic states, or pylorospasm from such possible causes as a reflex from duodenal ulcer, cholecystitis or chronic appendicitis. This can be overcome by an injection of atropine sulphate or several days use of benzyl benzoate. A definite and material stenosis of the pylorus would naturally prevent the entrance of the tube into the duodenum, though, fortunate, we have not as yet met with such an insurmountable obstacle.

Once sure that the tube has made a certain entrance into the duodenum either a barrelful of air or a small amount of water is introduced from a 50 c. c. syringe so as to balloon out the duodenal walls from the metal tipped tube, thereby preventing possible traumatism. The tube may then be connected with the first sterile aspirating bottle, and gentle aspiration begun.

In the fasting duodenal state, under physiologic conditions the sphincter of the common duct should be closed, and duodenal contents should be free from bile, with a grayish tinge, nearly transparent, quite viscid, and showing a small amount of flocculent sediment. In the presence of duodenitis, this sediment is greatly increased, and when much bile appears before the magnesium sulphate solution is injected, we may assume, according to both Meltzer and Lyon, the presence of some pathology of some group of organs physiologically related to this intestinal zone.

We now introduce by means of a sterile 50 c. c. syringe from 50 to 100 c. c. of the 25 per cent solution of the above mentioned salt, at about the body temperature or a little warmer. Gentle aspiration is begun, and usually in from two to ten minutes the bile begins to show, staining a light yellow the solution still in the duodenum. When the color deepens the first bottle is detached, and a second bottle brought into use. Gentle aspiration is continued, and it is sometimes necessary to make several injections of the solution before the desired results are attained.

Observation shows that the bile flows intermittently, especially after the bile in the ducts and in the gall-bladder has been drained, and is being collected as it is secreted from the liver capillaries. It would appear that first bile obtained is that present in the ducts—probably the common duct—and is generally about 10 to 20 c. c. The next and much darker bile, more viscid and turbid, we may reasonably assume comes from the gall-bladder itself. When the color of the bile begins to again become lighter, another bottle is connected, and we then obtain bile, probably directly from the liver, mixed with the duodenal secretion.

In a number of instances the differe transitions of color, viscidity and turbidity have been graphically portrayed to us. In some, however, the change is not so noticeable.

The duodenal tap is generally terminated by douching out the duodenum with a warm solution of potassium permanganate, boric acid or liquor alkalinus antisepticus (N. F.)

Let us briefly discuss some of the diagnostic inferences to be drawn from the appearance of the aspirated fluid. In choledochitis, the first bile is more viscid with much flaky mucus, is turbid, and may be a greenish yellow. It may contain pus cells, epithelial cells, and perhaps some red blood corpuscles.

In cholecystitis, without choledochitis, the first bile obtained is normal appearing, but it soon changes to a grossly pathologic character, viscid, turbid, perhaps very dark, and admixed with flaky or stringy mucus. The color may vary from a deep golden yellow to a light yellow, but always turbid. One case we have observed showed a frankly green color, but the turbidity was in evidence. Several other cases gave up bile of such a tarry consistency that aspiration was exceedingly slow.

As to the diagnosis of cholelithiasis, we have not arrived at any fixed conclusions yet. Lyon claims that in some of his cases of cholecystitis with gallstones present, he noted that the bile contained a sediment that was "gritty" or sand-like in consistency, which was seen microscopically to be made of crystals of bile salts. We have observed a number of cases of evident chronic cholecystitis with some gritty sediment in the recovered bile, but, while gallstones were strongly suspected, we did not feel justified in making a positive diagnosis from such data alone.

Regarding the practical therapeutic possibilities of this method of biliary drainage, they are certainly promising, but a sufficient time has not elapsed, nor has our experience been sufficiently comprehensive to permit us to speak with authority. To predicate an opinion as to the ultimate possibilities of non-surgical biliary drainage just now would be both unsafe and unwise. We feel, however, that it possesses real potentialities for good, and that the results so far attained seem to stamp it as worth while.

The indications embrace such disorders as chronic, recurring "bilious attacks," catarrhal jaundice, migraine, and infections of the gall-bladder, purulent or otherwise. To use the words of Dr. Lyon, "We are mechanically applying the surgical principles of free drainage for infected sacs, tubes and tissues, of free drainage for catarrhal states of inflammation of various grades, but without infection, of free drainage for gall-bladders that are atonic and contain static bile in which sooner or later there develop stones or a more serious pathologic condition, and while applying surgical principles, we are doing it non-surgically, and avoiding certain surgical risks. Besides this, and even more important, we are preserving tissue which may possess a power of recovery of function beyond our present conception."

The method is not disagreeable to any extent, and even some markedly nervous patients have co-operated with us willingly and without seeming inconvenience. None of our cases have suffered any ill effects, either present or subseqquent, and in a few instances they claimed to feel an almost immediate amelioration of some of the symptoms. We have made up to the present 87 taps on 22 patients. The greatest number on a single individual has been 8 taps.

We can affirm that in every one of our cases, in which three or more taps have been administered there has been a clinical improvement—in some instances quite striking. The malaise has lessened or disappeared, the skin has cleared up, the appetite and digestion have improved, in some the constipation

has seemed relieved, and the general status has been changed for the better.

We feel encouraged with what has so far been accomplished—enough so to continue our efforts and observations.

We have not in this study endeavored to present any cytologic or bacteriological data, though we have some material at hand. This phase we hope to report on at a later date.

To briefly present the merits of this method of diagnosis and treatment is the object of this paper, and we hope to obtain the consideration of the profession in the effort to physiologically drain the gall-bladder as a means of diagnosis of biliary disease, supplementing the usual clinical methods; as an alternative in types of gall-bladder or duct pathology, in which there is a doubt as to whether surgery should be invoked; and as a supplementary method of postoperatively continuing surgical principles of drainage in those cases in which previous surgical efforts have not been productive of ideal results.

VALUE OF BASAL METABOLISM IN THE DIAGNOSIS, DIFFERENTIAL DIAGNOSIS AND TREATMENT OF THYROID DISORDERS.

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By metabolism is meant the chemical changes which substances undergo when brought in contact with the living cells of the body and two factors are involved: catabolism or reduction of a higher to a lower compound, and anabolism—the building of complex substances from simpler ones. As a result of these chemical changes heat, mechanical energy and electric currents, all of which may be measured as heat, are produced and life is sustained. The measurement of this heat production when the body is at complete rest and when the digestive processes are at their normal daily minimum is what is known as the Basal Metabolism, or Basal Metabolic Rate. Like the temperature, therefore, it is a measurement of certain heat phenomena inherent in the living organism.

Just as the thermometer divides diseases into the febrile and afebrile groups, the basal metabolic rate differentiates diseases into three distinct groups: those with normal metabolic rates, those with increased rates, and those with decreased rates.

Controlling metabolism are the glands of internal secretion. Of these the thyroid is the principal or chief regulator. Whereas, other endocrine glands may be concerned with specific features of metabolism, such as growth, carbohydrate metabolism or water balance, the thyroid effects primarily the metabolic rate and secondarily, perhaps, other features.

So characteristic are the changes in the Basal Metabolism in Thyroid disorders, an increase being found in hyperthyroidism, a decrease in hypothroidism or myxedema, that it is considered the most scientific and accurate index of thyroid activity. It is necessary to remember that increases occur in hyperpituitarism, leukemia, febrile diseases, pernicious anemia, and in some cases of hypertension; that decreases are found in hypopituitarism, poly-glandular disturbances, and afebrile diseases. The normal rate is of value in the differential diagnosis of conditions simulating hyper-thyroidism; particularly so in neurotic cases with enlarged thyroids the clinical symptoms being so masked as to make a diagnosis difficult.

Without entering into the discussion of the technique, other than to say that rates between plus 10 and minus 10 are considered within normal limits, I wish to present some illustrative cases wherein basal metabolism studies have been of interest to me in doing clinical work.

"Normal Rate as Aid in Differential Diagnosis."

Pulmonary Tuberculosis simulating hyperthyroidism—Miss P—, age 27, single, with a negative past history until four years ago when she suffered with an attack of pneumonia following which she was troubled with nervousness, palpitation, and felt as if her heart was running away at times, weight had fluctuated with a gradual loss, no history of cough or fever, and had been under observation and treatment, including several applications of roentgen ray, for about a year for hyperthyroidism with no improvement. Was first seen April 24, 1920.

Examination in brief showed a very nervous woman under-nourished with a bilateral enlargement of the thyroid gland—tremor and slight exopthalomos present, pulse rate 110-120; blood and

urine showed nothing of importance, Examination otherwise, including X-ray of chest, negative. Basal Metabolic rate, three determinations were found to be plus 4—plus 8—plus 2—indicating no thyroid involvement. Subsequent examinations were negative until four months later when definite physical findings of pulmonary tuberculosis were found. Without the metabolic rate determination surgical interference would have been advised.

"Pulse vs. Metabolic Rate in Hyperthyrodism."

As a rule there is a close relation between the pulse rate, metabolic rate and the toxicity, the pulse representing a fair index of the toxicity. Occasionally, however, cases are seen with a rather slow pulse, and a very high metabolic rate, also, with a very high pulse rate, and a low metabolic rate. A case representing the latter is as follows: Mrs. L., age 49, married, with a history that she had suffered with nervousness and a rapid heart for 2 years and had been under treatment for 8 months for hyperthyroidism. Was seen March 15, 1920. The right lobe of the thyroid showed a moderate enlargement, exopthalmos and tremor present, metabolic rate was found to be plus 30, indicating a mild hyperthyroidism. Treatment: Rest in bed and roentgen ray; metabolic rate fell to plus 6, with marked improvement in general condition, pulse rate falling to 80 in recumbent position—85 while standing or walking.

Benedict and Murchbauser emphasized the fact that there is an apparent striking relationship between metabolism and pulse rate in normal subjects. They made observation before and after a light meal, during sleep and while awake, and after changing from the lying position to a sitting position, and noted that with the resultant percentage increase in metabolism there was a simultaneous and corresponding increase in the pulse rate, indicating a quantitative relationship. In their experience there was no such relationship in a comparison of different persons; hence, the relationship between pulse rate and metabolism holds only when the records are obtained from a single individual. DuBois commented on the correlation between the heart rate and basal metabolism in patients with exophthalmic goiter, and thought the rapidity of the heart action to be the best guide of the simpler objective tests in determining the severity of the disease and its course. Means and Aub, noted a close parallelism between the pulse rate and metabolism in about 60 per cent of the cases, while in the remainder there was a certain amount of parallelism.

White and Aub studied the electrocardiogram in forty-seven patients with exophthalmic goiter and concluded that there was only a moderate parallelism between the degree of tachycardia and the basal metabolism increase.

Peabody, Wearn and Tompkins found the basal metabolism to be normal in soldiers with "irritable heart" and observed that while these patients often have a marked tachycardia when under a mental or physical strain, it differed from the tachycardia of hyperthyroidism as it disappeared if the patient was permitted to lie down for a short period.

Eppinger gives an extreme tachycardia as one of the characteristics of the sympatheticotonic type, while a moderate tachycardia occurs in the vagotonic, and that latter type is presumably that in which there is most pronounced thymus involvement. Means and Aub, in their study of roentgen vs. surgery, comparing the end-results in their cases which had an extreme tachycardia and a moderate metabolic elevation on the one hand, with those that had an extreme metabolic elevation and a moderate tachycardia on the other hand, found that the so-called sympatheticotonic type did about equally well with surgery or roentgen ray alone, or with surgery preceded by roentgen ray treatment; while the vagotonic type with surgery alone gives poor results. They also showed in a limited number of autopsies that post-operative death seems greater in the vagotonic type when roentgen ray had not been given beforehand.

In this connection in relation to the publication of Means and Aub in which they advocate the use of roentgen ray in the treatment of exophthalmic goiter the following case is of some interest; the patient, age 38, (referred by Dr. Lafferty) presented an enlarged thyroid with typical symptoms of an exophthalmic goiter. Two years previous partial thyroidectomy performed—relief of symptoms followed for one year, after

which previous symptoms returned. Basal metabolic rate was found to be plus 70—indicating a rather severe thyrotoxicosis after roentgen ray treatment, and the last opportunity I had of observing her the metabolic rate was plus 20.

"Adolescent Goiter."

Adolescent goiters show normal rates. Not infrequently, however, young girls about the adolescent age are seen with enlarged thyroids and with symptoms suggestive of mild thyrotoxicosis. Basal metabolic studies are of great aid in handling these cases more scientifically. A case of this type recently seen was Miss W—, age 16, school girl, with enlarged thyroid having no exophthalmos or definite tremor with a general complaint of nervousness. The basal metabolic rate was plus 25. Metabolic rate fell to plus 4—with relief of symptoms following removal of diseased tonsils.

"Dysthyroid and Hypothyroid Types."

An interesting group from a diagnostic standpoint, and discouraging in regard to therapy are the so-called dysthyroid cases. There is present confusing complex of hyper and hypo symptoms, with basal metabolic rates which may be slightly above, below normal or normal, due regard being given for the limits of error of the method. Cases showing decreased metabolic rates can be regarded of the hypo type and improvement expected to follow thyroid treatment, those showing slightly increased are difficult to handle. A thyroidectomy would likely incur the risk of subsequent myxedema. A case probably of this type recently under observation with psychoneurotic symptoms had had a thyroid operation about eight months previous. Her symptoms at the time of examination were somewhat similar as previous to operation though milder with the addition of having chilly sensations at times. Basal metabolic rate was minus 15, showing a mild hypothyroidism.

Three cases clinically, myxedema, had metabolic rates minus 25—minus 28—minus 30. An opportunity to observe results of treatment impossible.

"Basal Metybolism in Diseases of Pituitary Gland."

The pituitary gland is concerned primarily with phenomena of growth and sex development, and perhaps also with water balance. The relation of the pituitary to the basal metabolic rate and to the function of the thyroid in health and disease has not yet been fully determined.

Only three cases have been observed in which the decreased metabolic rate was attributed to the pituitary gland. One was in a young lady having epileptic seizures, metabolic rate being minus 19. The remaining two were pituitary tumor cases, one, of the Frohlich's syndrome type showing rates minus 21 and minus 18. Three other brain tumors studied showed metabolic rates within normal limits.

In conclusion basal metabolic rate should always be combined with close clinical study, for not unlike any functional test, Wasserman reaction, etc., it is not only subject to error, but fluctuations are variable.

Basal metabolic studies are invaluable in some cases as aids in the diagnosis and differential diagnosis of thyroid diseases, while in many they are only confirmatory .

Basal metabolic rate furnishes an accurate index to the results of medical and surgical treatments of these conditions. As to the relative value of roentgen ray and surgery, my experience is too limited for an opinion.

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INGUINAL HERNIA.*

James W. Davis, M.D., Statesville, N. C.

In an endeavor to avoid an operation for hernia, many patients first try a truss for varying lengths of time before they finally come to operation. During this time, in addition to the disability, discomfort and often actual suffering, especially among those engaged in active outdoor work during warm weather, there is added the destructive action of the pressure of the truss-pad on the muscles and fascia. The constant pressure produces an atrophy of the muscular tissue and a thinning out of the fibrous and aponeurotic tissues. Adhesions between omentum or intestines or both and the sac may result and later complicate an operation. All these factors tend to make the radical operation for the cure of the hernia more difficult and the chance of recurrence greater.

The danger of strangulation in any case cannot be over-estimated. Only recently I operated upon a baby six months of age with a strangulated right inguinal hernia and shortly afterward upon a patient of eighty-six years for the same condition.

The statistics in regard to hermia vary somewhat in the different clinics but, in general,

(1) The earlier the operation the greater the percentage of permanent cures.

(2) Wearing a truss for any length of time may make an operation more difficult and the chances of recurrence greater.

(3) About 95 per cent of inguinal hernia are indirect and 5 per cent direct.

(4) A direct inguinal hernia is more likely to recur than and indirect.

(5) The smallest percentage of recurrences follow the operations in which the cord is transplanted.

(6) A recurrence makes a subsequent operation more difficult and the chances of another recurrence even greater than before.

(7) In the difficult cases in which recurrence is likely from any of the usual causes, the use of a flap of fascia or aponeurosis in addition to the muscular tissue for closing the opening gives the greatest percentage of permanent cures.

No one type of operation is suitable for all cases but each case should be repaired by the most suitable method.

An operation which I have been using for some time in difficult cases where recurrence is more likely, especially direct inguinal hernia

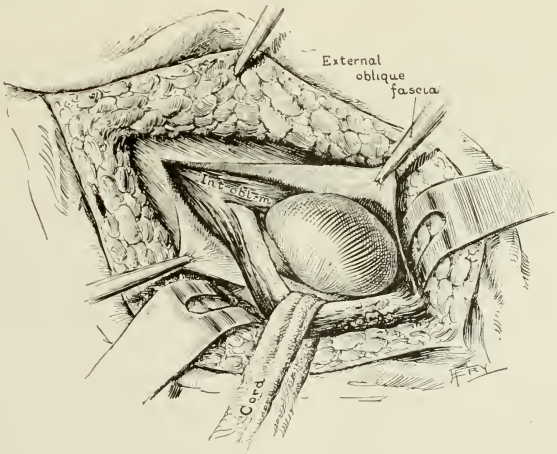

Illustration No. 1.

is one which I first saw used by Dr. J. C. Masson of the Mayo Clinic, through the courtesy of whom I have obtained

*Read before the Iredell-Alexander County Medical Society, December 14, 1920.

the illustrations. This is a slight modi fication of the Andrews operation.

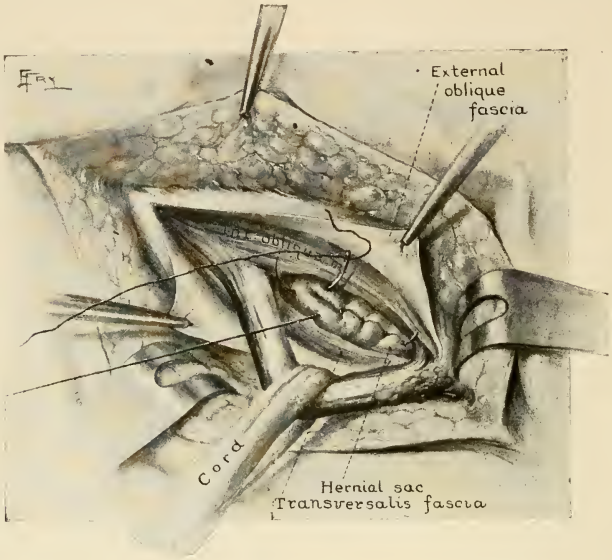

Illustration No. 2.

The sac of a direct hernia is not dissected out unless it is unusually large but is plicated and infolded by catgut sutures.

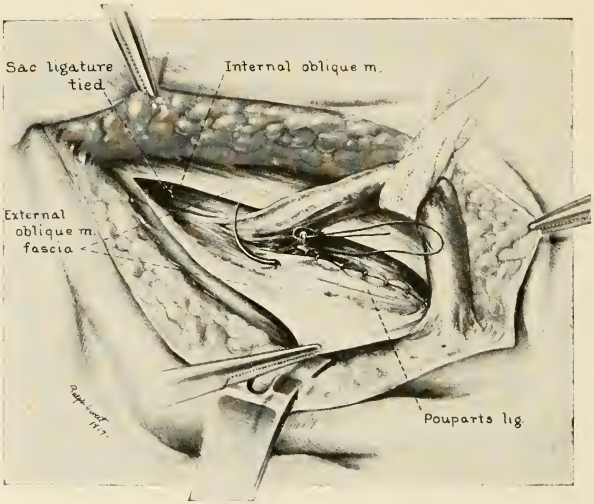

Illustration No. 3.

The conjoined tendon and internal oblique are brought down and sutured to Poupart's ligament as in the Bassini operation.

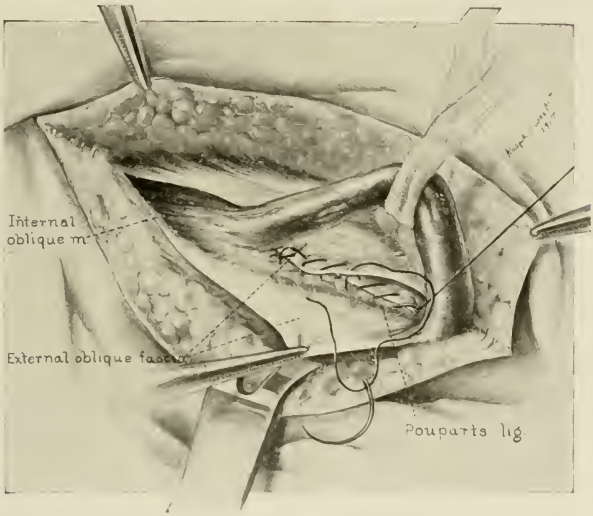

Illustration No. 4.

The upper layer of the aponeurosis of the external oblique is likewise sutured to Poupart's ligament.

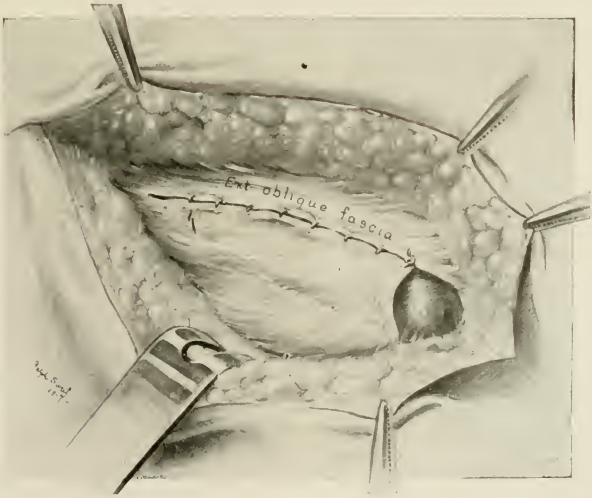

Illustration No. 5.

When necessary, the internal ring may be tightened slightly by a single suture. Then the lower part of the aponeurosis of the external oblique is imbricated over the upper, the two layers forming a complete covering for the cord.

This operation gives excellent results and I believe is one of the best we have for difficult cases. With proper preparation, careful technique at operation and proper care on the part of the patient after leaving the hospital, the dangers incident to an operation are reduced to the minimum and the results most satisfactory, making an early operation for repair advisable in practically all cases.

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SCHISTOSOMIASIS OR BILHARZIASIS.

By Edward J. Wood, M. D., D. T. U. (England)

The war has aroused great interest in Schistosomiasis with resulting advance in our knowledge of this important disease. When the war took large numbers of British troops to Egypt the necessity of a careful consideration of Schistosomiasis became imperative. Before the war there had been much speculation regarding the life history of the worm. Looss had written much on the subject but his views were strongly opposed by the British workers.

It will be recalled that hitherto two species of the Schistosomum have been recognized. One is the S. Japonicum occurring in Japan causing a disease picture characterized by cirrhosis of the liver ascites and ematiation. The other is S. haematobium which causes vesical symptoms chiefly which are characterized by bloody urine, secondary anaemia and eosinophilia. L. W. Sambon of the London School of Tropical Medicine first demonstrated that the parasite known as S. haematobium really included two species. The difference clinically was chiefly that in true S. Haematobium the ovum is characterized by a terminal spine while included with it was the second species characterized by the ovum with a lateral spine. This he named S. mansoni. Sambon's observation was bitterly opposed by the great Looss but the work done by the Bilharzia Mission to Egypt soon confirmed it. It was early found that the S. haematobuim showed a marked preference for the bladder and urinary tract while the S. mansoni selected the rectum. It is important to recognize, however, that occasionally the S. mansoni occurs in the bladder and the S. haematobium in the feces. I have found both ova in the feces of a patient in North Carolina.

Only until recently has the life history been clearly understood. By the genius of L. W. Sambon in London the explanation of the problem in Egypt was theoretically suggested and field work confirmed his views even in detail. This far-sighted solution of a problem as old as man was made possible by an amazing knowledge of medical zoology and a careful consideration of the biological features.

The ova of the various species are passed in the urine and in the feces and when water is reached the miracidium contained in the ovum bursts out of the shell and swims about in the water seeking the specific intermediate host. In the case of the S. haemetobium the host is a snail of the Bullinus species. and in S. mansoni the host is a snail of the Plenorbis species which differs markedly from the former in morphology.

If the miracidium does not find its intermediary in 36 hours it dies. If the intermediary is present the miracidium enters its body probably by way of the respiratory apparatus and finally reaches the digestive and hermphrodite glands. Here it becomes a morula and later is hollowed out into elongated sporocysts and these by the budding process produce cercarial. When maturity is reached the cercarial meet the definite host. which is usually man, in 24 hours. The cercarial penetrate the skin or enter by penetration of the upper alimentary tract. Leiper showed that when monkeys were given water infested with cercarial, after drinking, the mucous membrane of the mouth showed redness marking the points of penetration. From the skin the cercarial make their way to the portal vein—where they develop into adult worms.

The ova are the things in this conside-

ration of vital importance to the physician for by their presence in the urine or the feces or occasionally in both the diagnosis is made. This ovum is dark yellow or brown and has the terminal or lateral spine as above mentioned. There is little difference in the size of the egg of S. haematobium and S. mansoni though the latter is regarded as a little shorter. The measurements are recorded as 120-160 mic. long and 40-60 mic. wide.

The ova may be hatched out under the microscope by lowering the salt content of the fluid which bathes them. This is easily done by flowing under the cover slip a little warm water. Soon after this addition there can be seen a movement in the lateral wall of the ovum and activity of the cilia covering the miracidium is noted. This is thought to be due to the passage of water from the fluid of a lower to a higher osmotic pressure. Very rarely can miracidia be seen free in the fluid.

It is obvious that those who go into the water are the ones to be infected. In Egypt the conditions are peculiarly adapted for the well being of the parasite. The soil is polluted, the snail is present and the people go down into the water of the Nile, as well as other waters, for numerous and varied purposes. I have heard it said in London that the future of Egypt was wrapped up in a solution of the Schistosomum problem. Since the earliest times it seems probable that this disease has been one of the curses of that country. The oldest mummies are said to contain the ova which are readily identified. At this time there are thousands of native workers already victims of the disease engaged in throwing up on the banks of the streams the snails. The snail exposed to the fierce rays of the sun soon die and with them perish the contained parasite.

While in London Dr. Sambon was greatly interested in my having found a patient harboring both the S. hameatobium and the S. mansoni. Professor Leiper questionsd the correctness of my observation because he did not believe suitable snail intermediaries were to be found in North Carolina. But Dr. Sambon soon supplied me with a list of the snails of this section and it was evident that there was no lack of numerous intermediaries for both species.

The problem of how the cercarial can find entry into the skin of the people of North Carolina is much more complex than the explanation in Egypt. In Guy's Hospital I saw an infection with S. haematobium in an Oxford student who was a Boer. He had been infested while swimming in a stream in South Africa. If the disease occurs generally in North Carolina it is obvious that the children and occasionally adults can easily be infested by swimming and wading in the streams containing the cercorial. But there must be another explanation if a wide spread occurrence is to be accounted for and this remains to be found. May it not be brought about possibly by the occurrence in open wells, especially some of the very primitive unfaced ones, thus allowing the presence of the snail and the cercarial?

Bloody urine with indefinite and oftentimes trivial bladder symptoms is not uncommon in my experience in North Carolina. High cosmophite counts have baffled my knowledge of parasites for many years. I believe we have Schistosomiasis in this State and it may explain the high prevalence of urinary infections especially along the coast. I have made this diagnosis tentatively three times since returning from Europe. These notes are published only to arouse interest in unexplained aeosinophilia, bloody urine and a diarrhoea which usually is of mild degree. If this condition, or rather these two conditions, do occur it can be second only to hook worm in public health importance. From an utilitarian point of view such a diagnosis is of vital interest for it has been recently shown by the British that tartar emetic intarevonusly is of great therapeutic value. Those interested should read the report in Parasitology (Cambridge Press) vol XII. No. 1, Jan. 1920, by Major Philip Manson-Baker and Lt. Colonel N. H. Fairley. It is worthy of note that these men in their work dissected over ten thousand snails to confirm the explanation given above of the life history.

S. mansoni occurs in the West Indies and it would be reasonable to expect it here. So far I am disposed to suspect that the S. haematobium is now often to be encountered.

What could offer a more enticing or vital problem for the medical profession of North Carolina: one well within the range of their capacity to solve?

ACIDOSIS, ITS DIAGNOSIS AND TREATMENT.*

By A. McR. Crouch, M. D., Wilmington, N. C.

Acidosis may be defined as a condition in which there is a diminution of the body alkalies, especially sodium bicarbonate of the blood.

Acids are constantly being formed by the metabolism and catabolism of the body. They claim bases to form salts and are thus neutralized and eliminated. When there is an excess of acids formed, as in fevers or an excess elimination of alkalies as in diarrhea, the basic contents of the blood becomes insufficient to neutralize the acids and as a result, acidosis develops. The body cells are extremely sensitive to the stimuli of acids, therefore the blood must be kept neutral or slightly alkaline to prevent such a symptom complex as acidosis. Under normal conditions nature takes care of the basic-equilibrium of the blood with wonderful exactness, but under abnormal conditions nature must be assisted by the introduction of alkalies therapeutically.

Acidosis is a common condition. Henderson says "Its as common as fever," though the milder cases are difficult to detect and go undiagnosed. It may be mild, moderate or severe, and is classified as True and Ketone acidosis. True acidosis is the type dealt with in this paper. The Ketones is the type following anesthesia, starvation, and diabetes. Its causes and treatment differ somewhat from that of the true type. (True acidosis may apparently be primary or secondary to other conditions.)

Max Kahn in the July number of the 1920 Medical Clinics gives the causes of true acidosis as follows:

1. Intake of excess acids either in the food or by poisoning with acids.

2. Continued depletion of alkalies from the body, either due to a deficiency in intake or to an excessive excretion as diarrhea.

3. Retention of carbon dioxide in the blood, as in asphyxial state.

4. Increased catabolism in the body with elimination of excess quantities of acids as in fevers.

5. Obstruction to the excretory channels of the body as in obstipation or nephritis.

6. Excess production of acids in the intestinal canal with the absorption of these acids in the blood as in intestinal putrifaction.

7. Incomplete oxidation of carbohydrates with the formation of lactic acid as in severe muscular exertion.

8. Hepatic functional insufficiency.

Symptoms of acidosis are referable mainly to the nervous and respiratory systems. Kirley says "The onset is acute in children and manifests itself in two ways, a peculiar symptom complex seen in infants and the so-called cyclic vomiting." In the former hyperpnea is an early and constant symptom. There is an increase in inspiration and expiration with no pause between. The respiration becomes of a deep sighing character and usually labored. There is no cyanosis but it is associated with a peculiar ashy gray color. The patient grows restless, irritable, with sleeplessness. It often cries out as if in pain. This is followed by stupor and sometimes coma. If aroused from the stupor it shows signs of irritability. Symptoms of severe prostration are always present. The temperature range is usually from 99.5 to 101.5 degrees F, with marked fluctuations. There may be a leucocytosis ranging from 10,000 to 25,000. The amount of urine excreted is scanty sometimes approaching anuria.

In the recurrent vomiting type there is extreme nausea, wretching and vomiting which is distressful and continuous. There is extreme thirst. The patient begs for water. It will drink a glass, vomit and call for another, and keep this up hour after hour. The vomitus at first contains food, but later only mucous and water which may have been taken. Acetone may be detected on the breath ,or in the urine. This is not diagnostic of true acidosis because it occurs in other conditions.

Diagnosis is made on history, the type of respiration, low temperature, and ashy gray color. The conditions most likely to be confused with acidosis are pneumonia, meningitis, intestinal obstruction appendicitis, and nervous vomiting. Pneumonia can be ruled out on account of the type of breathing which is sighing in character with prolonged expirations, no cyanosis, no lung signs and the low temperature. Meningitis can be ruled out by the absence of all signs of meningeal irritation and the low temperature. Intestinal obstruction

*Read before the Onslow Medical Society meeting, Jacksonville, N. C., January 20, 1921.

can be ruled out by the character of the vomitus which contains mucous and water in acidosis—in obstruction it contains bile and becomes stercoraceous, by the absence of abdominal signs and the free movements of the bowels. Appendicitis can be ruled out by the low temperature and the absence of abdominal signs and symptoms. Nervous vomiting has the same type of vomitus, the absence of physical signs, the clean tongue and low temperature, but the excessive vomiting and the absence of any cause for nervous vomiting make the diagnosis clear.

The administration of 10 to 15 grains of sodium bicarbonate in a normal child will make the urine alkaline in a few hours. In acidosis it requires 5 to 10 times as much to make the urine alkaline. This may be used advantageously in making a differential diagnosis.

Treatment—Prophylactic treatment should be carried out in children who have had an attack of acidosis, because one who has had the condition is liable to have it again. The food should be carefully guarded and sufficient amount of those foods which furnish basic forming substances in the blood, such as celery, cabbage, potatoes, turnips, apples, milk, beans, peas and corn, should be given. The bowels should be kept open by laxatives and the kidneys flushed with lots of water and occasionally an alkaline diuretic should be given for a few days at a time. Such children should have plenty of exercise and the skin kept clean.

In diseases when acidosis might be anticipated alkalies should be given to avoid its development. Furthermore acidosis is so difficult sometimes to diagnose in its incipiency it may get well established before it is realized. Give soda and keep the urine alkaline.

In the treatment of the attack there are three principals to be established in the beginning:

1. Give a sufficient amount of sodium bicarbonate to make the urine alkaline and keep it so.

2. Give a sufficient amount of fluids to dilute the toxins and keep the kidneys active.

3. Give sufficient amount of sedatives to prevent exhaustion.

Sodium Bicarbonate and the fluids may be given together either by mouth, by rectum, intravenously or by hypodermoclysis. In children it will require from three drachms to one ounce of soda in 24 hours to keep the urine alkaline. The tolerance of alkalies increases 5 to 10 times in acidosis (Holt). Soda given by mouth should be well diluted. One teaspoonful in a glass of water given in teaspoonful or tablespoonful doses every few minutes. When vomited, high colon enemata of one drachm of soda bicarbonate to six ounces of water should be given every four hours. If the enemas prove irritating and are expelled fifty to one hundred c. c. of a 2 per cent soda bicarb. given intravenously or by hypodermoclysis and repeated often enough to keep the urine alkaline, every 4 to 6 hours if necessary.

When vomiting is marked all food by mouth should be withheld. If the soda is not retained, crushed ice should be given to allay thirst. Sometimes stomach washings with 4% soda solution gives great relief.

Restlessness and sleeplessness should be controlled by sodium bromide and chloral hydrate. This may be given per rectum in the high enemata when it can not be given by mouth. If this fails morphia should be used hypodermatically. No food should be given for several hours after the vomiting ceases. Then only whey, cereal waters, or cereal water and sugar, beginning with one ounce and gradually increasing the quantity if tolerated. Later cereals and toast can be added, meats and milk should be used with caution until recovery is quite complete.

The bowels should be kept open and the patient kept in a darkened quiet room.

THE TREATMENT OF SYPHILIS*.

J. F. Robertson, M.D., Wilmington, N. C.

I realize that if one would discuss fully the treatment of syphilis, one must go into the care and treatment of many ailments with which the genito-urinary surgeon seldom meets. I mean by this certain diseases of the heart, vascular system, kidneys, and eye which have had syphilis as an etiologic factor; but have now become entities which rightly require the attention of

*Read before the Onslow County Medical Society at Jacksonville, N. C., on January 20, 1921.

the internist or ophthalmologist. I shall deal with syphilis only as it is seen in its so-called primary, secondary, and tertiary stages; and with syphilis of the central nervous system.

It is essential for any one who treats syphilis to be familiar with a reliable method of examining the fresh lesion for the organism of syphilis; to know the general principles underlying the Wassermann reaction; and certain points about the technique used in the laboratory examining your specimens; and to be familiar with the method of making routine examination of the spinal fluid.

Of the various methods advocated for identifying the Treponema pallidum in the fresh lesion, I feel that examination by means of the dark field illumination is best because the Treponema pallidum may be few and hard to find if not moving, and because the nature of the movements is of diagnostic value.

To secure a specimen, cleanse the chancre rather roughly (removing the crust and surface layer) with normal salt solution and a piece of gauze to get rid of the contaminating surface organisms; and squeeze out a little serum from the deeper tissues—Improvised Bier's cups, made by attaching a rubber bulb or nipple firmly to a bit of glass tubing, the edges of which have been rounded in the flame, may be applied over the lesion to make suction; or better still, serum may be aspirated from the outer indurated edge of the primary lesion or regional lymph glands by a syringe with a small sharp needle.

Place the drop on a thin slide and drop over it a thin cover-slip, so that the material spreads out evenly in a thin layer between slide and cover-slip. It is best not to have so much exudate that it spreads to the edges of the cover-slip, for this will set up little capillary streams which will disturb the examination.

A drop of cedar oil is placed on the slide under the centre of the preparation, and another on the cover-slip. The preparation is then gently placed on the condenser so that the oil spreads out evenly without bubbles on the surface of the dark-filed condenser. Focus the stream of light from an arc light on the mirror, and with the low power of the microscope center the condenser. The correct focus of light is obtained by moving the condenser up and down until the center ring of light becomes a point of light in the middle of the preparation. This adjustment is necessary because of variations in the thicknesses of slides.

Now the oil immersion lens is gently lowered until it touches the oil on top of the cover-slip. If the bull's-eye lens on the arc is unsatisfactory, a two-litre flask filled with clear water placed in front of the mirror is helpful.

In examining preparations from primary lesions it is comparatively easy to diagnose Treponema pallidum from their appearance and characteristic movements. When examining specimens from other lesions such as mucous patches, care should be exercised not to confuse the organism of syphilis with other Treponemata found in such places. The most difficult organism to distinguish from Treponema pallidum is Treponema mucosum, found in the mouth and throat. In such cases the findings should be interpreted in conjunction with clinical evidence and the Wassermann test.

Treponema pallidum is a spiral organism with individual twirls regular in size and contour. It is from five to twelve micra in length, and has usually from ten to twenty spirals. The organism maintains the regularity of the spirals when in motion. The two principal movements are spiral and longitudinal.

In genital sores Spirocheta refringens is larger and coarser, and has fewer spirals which are irregular in size and shape. In the mouth, Spirocheta dentium may confuse; it is much smaller than Treponema pallidum. If the first dark-field examination is negative, apply a wet dressing of normal salt solution and make subsequent examinations before deciding that the sore is not syphilitic.

The Treponema may be measured roughly by comparing with a red blood cell, a few of which are always present in the smear; and remembering that the average diameter of a red blood cell is 7.7 micra. Usually Treponema pallidum is about twice as long as the diameter of a red blood cell.

One must remember that the Wassermann test rarely becomes positive before ten days; that even then it is technically not a specific test; that the in-

gestion of even small amounts of alcohol or ether within twenty-four hours of the withdrawal of the blood may produce a false negative reaction. Fever may cause a false positive reaction; acidosis may cause a false negative reaction. Positive reactions are also said to occur in certain other diseases: Yaws, Malaria, Relapsing Fever, Yellow Fever, Tubercular Leprosy, Scarlet Fever, Treponosomiasis, and Vincent's Angina.

There are three types of antigen in general use: Cholesterinized, acetone-insoluble, and alcoholic. The cholesterinized antigen is much the most sensitive, and the alcoholic the least sensitive. The difference is such that with the same serum and under exactly similar conditions we sometimes get a negative report with an alcoholic antigen, and four plus with the cholesterinized antigen.

Fixation is a step in the reaction which allows the antigen and antibodies in the serum to fix themselves to the complement. Ice-box fixation is much more sensitive than incubator fixation. Again certain human sera contain a natural amboceptor against sheep's red blood corpuscles in such amount that unless allowed for, false negatives will result if the usual dose of amboceptor from a rabbit is added. For the benefit of those who use our State Laboratory of Hygiene in Raleigh, I might say that inquiry has revealed that the antigen used is the alcoholic extract of heart muscle; that titration tests are always made for the presence of natural amboceptor; and that water-bath fixation is used.

The Wassermann usually becomes positive in the third week of the disease. Tabetic sera are negative in about thirty-five per cent of cases. At times in a patient with a negative serum a dose of arsphenamine will render it positive; the so-called provocative test.

There are only two drugs for the treatment of syphilis, and they should be pushed to the limit in the very beginning before the organism has had a chance to develop immunity to the drug. We all know how quinine in small doses may hold in abeyance the malarial parasite, and if not given in sufficient quantity will not only not kill the organism, but give it a certain degree of immunity to quinine. So it is with syphilis. Arsphenamine or neo-arsphenamine must be given as often and in as large a quantity as the patient can tolerate. Before each injection the urine should be examined and the patient questioned for evidence of reaction (headaches, nausea and vomiting, chills, fever, and diarrhoea). My plan at present is to give to the adult a first dose of 0.45 grams of neo-arsphenamine, followed every other day by another 0.9 grams intravenously for six doses; then ten injections of mercury salicylate (grs. 1 or 2) are given at intervals of four days. Always cautioning the patient to use particular care to keep the mouth and teeth in good condition, and to report the first signs of swollen or tender gums.

The mercury like the arsenic should be pushed to the point of tolerance. Your object should be to produce the early signs of salivation. Then only do we know that the patient is getting enough of the drug.

At the end of this treatment a rest period of one month is given and a blood test made. If we have begun treatment reasonably early, and the Wassermann is now negative, my plan is to give four more doses of neo-arsphenamine and ten more injections of mercury. The patient is then required to report every three months for two years for a blood test. It is a good plan in this connection to remind the patient by a note through the mails when the time for the test is due. One point about the Wassermann tests that should not be overlooked is that on the first return three months after the last treatment, the spinal fluid as well as the blood should be tested. And again before the patient is discharged the spinal fluid should be tested for evidence of cerebro-spinal infection.

This treatment has to be varied naturally with the patient, and the dosage according to the tolerance. 0.15 grains of neo-arsphenamine to each thirty pounds of body weight is a good working average.

We now recognize that the meninges are involved much earlier and more constantly than was formerly supposed. It has been shown from a study of 221 cases of syphilis in which only the chancre was present that deviation from the normal in the spinal fluid occurred in 49 cases, or 22 per cent. In-

crease in globulin and albumin was the most constant of the abnormal findings, occurring in 25 of the 49 cases. Pleocytosis was the next most frequent finding, occurring in twelve cases. The positive Wassermann test in the fluid occurred in only eight cases. Within certain limitations, any single one of the above-mentioned deviations from the normal occurring alone must be regarded as evidence of early central nervous system involvement.

So-called recurrences in the central nervous system are misnomers; they have never been cured. We may have extensive involvement of the nervous system with complete absence of neurologic signs or nervous symptoms. It is possible in an early case to have a negative blood Wassermann and a positive spinal fluid Wassermann. In some, intravenous and mercurial therapy control virulent neurologic infections, while others are untouched. Frazier has shown that the permeability of the choroidal plexus in different individuals varies greatly. Some are permeable to the arsenic and mercury preparations, and some only partially so or not at all. This probably accounts for the fact that some cases with central nervous system involvement require none but intravenous and intramuscular therapy to control them; while in others the drugs apparently do not permeate the choroidal plexus and get into the spinal fluid.

I have under my care now a case of this character: a man forty-seven years of age, who twenty-six years ago had a chancre for which he received full and, what was considered at that time, adequate treatment for a period of five years. Repeated blood tests since have been negative. Six months ago he suffered a sudden hemiplegia from which he slowly recovered. He came to me complaining of headaches, loss of memory, and inability to concentrate. The blood Wassermann was negative; but lumbar puncture revealed a fluid under considerable pressure, with a cell count of 200 and a plus four Wassermann. He has had a series of seven injections of neo-arsphenamine, three of which were followed by drainage of the spinal canal of from 30 to 40 c.c. of fluid. He is now just beginning to feel the early signs of salivation from mercury injections. The last report on his spinal fluid was negative.

Experience has shown that it is best to "prepare" cerebro-spinal cases by a week of mercury before beginning arsphenamine injections. In cases which do not respond to the ordinary intravenous and intramuscular therapy in a reasonable time, I use the Swift-Ellis method. This is briefly as follows: 0.9 grams of neo-arsphenamine is given intravenously; one hour later enough blood (about 50 c.c.) is withdrawn to yield 12 c.c. of serum, to which is added 18 c.c. of normal salt solution. Now at 56 degrees C for half an hour and, after withdrawing by lumbar puncture 30 c.c. cerebro-spinal fluid, allow the salvarsanized serum to flow into the subdural space by gravity.

One should not be too optimistic in regard to the treatment of advanced cases of cerebro-spinal syphilis such as tabes and paresis. Here organic change has taken place in the neurons or horn cells, and at best we can only arrest the process.

The most efficacious means of administering mercury is by intramuscular injection or inunction. If carried out properly the inunction method is excellent and probably equal to intramuscular injections; but there are serious objections to inunctions unless one puts himself in the hands of a professional rubber. It requires about thirty minutes of vigorous rubbing to cause absorption of the usual dose; dermatitis is not an infrequent sequel; and the method is none too cleanly. If the intramuscular route is used one has the satisfaction of knowing that the patient is getting a known amount of the drug at regular intervals.

Of the drugs used for intramuscular injection I prefer the insoluble compounds; and of these mercury salicylate is the one of choice. The insoluble compounds may be given at longer intervals, the injections are less painful, and in my experience have never produced an abscess.

An interesting study of mercury injections by means of the Roentgen ray has been made by Cole, Littmann and Sollmann in which they show from an extensive study of clinical cases that the time of absorption was as follows: Mercury salicylate; by gluteal muscles, mean, 4 days; extremes 4 to 10 days. By lumbar muscles, mean, 8½ days; extremes, 2 to 24 days. Calomel: mean,

15 days; extremes, 4 to 39 days. Gray oil: unabsorbed during entire period of observation, a mean of 43 days; extremes of 16 to 125 days. Thus it would seem that of the insoluble preparations of mercury, the salicylate is preferable.

These injections are best given deep into the gluteal muscles. Alternate sides being used, dividing up the buttocks into three injection sites. The area selected for injection is cleansed with gasoline and alcohol, and the injection made with a sharp needle at least 1½ inches long. By pinching the buttocks between the fingers on entering and withdrawing the needle, the injection is made practically painless. After introducing the needle one should make sure a vein has not been punctured by waiting at least one minute and making suction with the syringe. If no blood appears then he may proceed with the injection. After the injection is made the area should be massaged vigorously for a minute. If properly given these injections seldom cause nodules, and the danger of abscess is nil when proper precautions as to sterilization are taken.

In 1915 I began using the neo-salvarsan in concentrated solution instead of the salvarsan. Neo-salvarsan is a less powerful spirocheticide, but this disadvantage is overcome by using a larger dose of the neo-salvarsan. I am convinced that neo-salvarsan is better borne by the patient than the older drug, and it is certainly easier to administer and causes less reaction. I use now a small gauge needle, the size of an ordinary hypodermic needle, and give the full dose of neo-arsphenamine in 5 to 15 c.c. of distilled water. By using a small needle one is better able to strike the vein, and the solution cannot flow too fast through such a small calibre needle. By making suction with the syringe one may at any time during the process of administration make sure the needle is in the vein by noting whether blood flows back into the barrel of the syringe. It is well to make sure of this fact, for the concentrated solution is very irritating and painful when injected into the tissues around the vein.

There are some unusual effects of arsphenamine which should be mentioned. In the early stage of syphilis when the spirochetes are more numerous, the administration of arsphenamine, on account of its parasitotropic effect, floods the system with endotoxins from the destroyed bodies of the virus, which may cause chills and febrile reactions of more or less degree; these, however, subside usually during the course of a few hours. Nausea and vomiting sometimes occur, due to the liberation of arsenic in the gastric mucosa, and cramps in the abdomen from the same action of the drug upon the mucosa of the bowel. This seldom if ever becomes severe and is promptly relieved by a cathartic. Fever has also been thought to be due to the water not being freshly distilled.

Immediately following the intravenous administration of arsphenamine, usually after repeated injections, sometimes an alarming group of symptoms occurs—sudden congestion and swelling of the face, with cyanosis and a peculiar feeling of congestion of the head. The patient may cough and complain of pain in the chest. These symptoms are believed to be due to the anaphylactic action of the drug. Hitano has recently claimed that they are due to a depression of the suprarenal glands. Certainly a hypodermic injection of adrenalin, which should always be at hand, hastens their disappearance.

The organotropic action of arsphenamine sometimes occurs with more or less severity. Fordyce warns us against repeated injections of the drug after the patient has shown a tendency to cutaneous erythema. The organotropic effect may have a specific action upon the kidneys, liver, adrenals, and brain. Jaundice sometimes occurs after the administration of arsphenamine due to organotropic action on the liver. Sometimes after the administration of arsphenamine there occurs an apparent exacerbation of the syphilitic lesions on the skin, in the form of redness or swelling.

Any organ of the body may harbor foci of spirochetes, which when destroyed by arsphenamine may produce the above reaction, known as the Herxheimer reaction. This is due to the killing of a largenumber of spirochetes in situ, thereby liberating a large amount of endotoxin to effect the cells of the lesion and surrounding tissues.

Wile, Odo J., and Hasley, Clyde K., Ann Arbor, Mich. Involvement of the nervous system during the primary

stage of syphilis: Continued study. J. A. M. A., Jan. 1, 1921.

Littmann, Sidney, and Sollmann, Torald, Cleveland, O. A study of mercury injections by means of the Roentgen ray. J. A. M. A., December 4, 1920.

NOTE—Dr. C. A. Shore, director of the State Laboratory of Hygiene at Raleigh, N. C., in a letter in regard to the Wassermann technique used, states that the reports are based on the use of alcoholic extract of heart muscle as antigen; but that other antigens are often used for comparison, that it is necessary in his opinion that a method be used that will not give a false positive; that it is quite possible that a few more positives might be obtained by certain changes in technique.

THE CAUSES AND MEDICAL TREATMENT OF CONSTIPATION.

T. W. Rainey, M.D., Fayetteville, N. C.

Constipation may be defined as an infrequency in the evacuation of the bowels, with a tendency to abnormal dryness and a reduction in the quantity of feces. It may occur in several forms, the end result in each being the same. First: There are those cases in which there is a small hard stool every second or third day, and in some cases at longer intervals. Second: Those who have an evacuation of the bowels every day, but the stool is small, hard and dry. Third: Those who have a normal stool every day, but the time intervening between the ingestion of food and the discharge of the residue is considerably increased over the normal. This is one of the most frequent abnormal conditions to which the human race is susceptible, and may ultimately lead to various changes in the mental and physical condition of the patient, due to the absorption of the toxins from the retained feces. It is a condition which oftimes taxes the physician's intellect to correct, and requires a strict adherence to the rules of hygiene, diet and medication, with occasional surgical interference, recommended in these cases. Each case should be studied individually and the treatment outlined accordingly.

*Read before the Fifth District Medical Society meeting, Sanford, N. C., December 16, 1920.

The progress of the contents through the different portions of the intestinal tract is produced by peristalsis which is caused by mechanical and chemical irritants acting upon the inner lining of the bowels. These irritants may be solid contents, water and other liquids or gases. The nervous stimuli proceed from the plexuses of Auerbach and Meissner. The movements of the small inestines are under direct nervous regulation, the impulse travelling from the spinal cord through the sympathetic plexuses. Motor impulses reach the intestines through the vagus. The splanchic is the "check rein," irritation of which inhibits the intestinal movements. Through these agencies the residual matter left in the bowels after complete digestion traverses the small intestines in the course of a few hours and the large intestines in from 20 to 24 hours. Any delay therefore in the progress of the contents, especially in the colon, results in the absorption of water and the toxins of bacterial origin, the feces gradually undergoing increasing solidification.

On reaching the rectum the feces set up reflex stimuli and are evacuated by direct expulsive efforts, assisted by contraction of the abdominal muscles and diaphragm. The abdominal muscles further assist in the activity of peristaltic contraction.

From this information it will be seen that sluggishness in any of the above factors will increase the time in which the residue of digestion remains in the intestines, and result in constipation. To these functional causes may be added certain organic conditions which, by placing an obstruction in the path of the contents, retard their progress.

For convenience the causes of constipation may be classified as functional and organic.

The functional causes are the more frequent and can be relieved by appropriate hygienic, dietetic and medicinal measures. Under this heading may be considered conditions which produce intestinal torpor, and those which weaken the contraction of the diaphragm and abdominal muscles, thus leading to a reduction of the expulsive power and indirectly to a weakening of the intestines themselves. Weakening of the intestinal wall in constipation is of little importance as compared with alteration of

the contents of the bowels and the neuro-muscular mechanism which controls peristalsis and lessening of the activity of the diaphragm and abdominal muscles.

Habit is an important factor in the normal evacuation of the bowels. The normal individual usually has a desire to empty the bowels after the first meal of the day. During the night the food taken the previous day collects in the lower bowel. Changing from the recumbent to upright position together with the taking of food into the stomach and the exercise incident to the duties of the morning excites peristaltic contractions and results in the desire to evacuate the bowel. Due to the rush of business and the activities of present day living, there is a tendency to postpone the act to a more convenient time, which oftimes does not present itself. With each postponement the reflex stimuli become less and less effective and a state of chronic constipation results. The long retension of feces in the lower bowel gives rise to dilatation of this portion of the bowel, and weakening of its expulsive force. This is also true in those whose business necessitates their being away from home and their making long journeys when from lack of convenient places, timidity and other reasons they do not head the call. They soon acquire the habit of periodic "drug taking" to temporarily overcome the constipation. This is another important cause. The bowels soon depend on the laxative to stimulate peristalsis, and during the interval between doses are torpid. The oft repeated enema likewise lessens the rectal stimuli and frequently results in a dilated condition of this portion of the intestinal tract.

Frequently hypomotility of the stomach or pyloric stenosis result in a retention of the food in the stomach, and the stimuli which pass from it to the intestines are less effective. This retention may so change the contents that on entering the intestines they do not produce the normal contractions.

Diet is a very important causative factor of constipation. The taking of food which does not leave a residue in the intestines lessens the peristaltic contractions which are increased by the presence of a residue in the bowels. Milk and highly concentrated foods as meat and eggs are almost completely digested, while vegetables contain a great deal of undigested matter and mineral salts which stimulate peristalsis. Fruits, raw and cooked, aid in the normal evacuation of the bowels. It is the vogue nowadays to eat more concentrated and pre-digested foods and not enough ruffage.

Likewise water if not taken in sufficient quantities results in excessive dryness of the intestinal contents and produces constipation. The drinking of hard water containing large quantities of lime salt will have the same effect.

When sluggish peristalsis with long retention of foods in the upper bowels is present bacteria act as a contributory factor. With the long retention in the upper bowel there is a greater degree of absorption of nutritious elements so that when the residue reaches the lower bowel where the bacterial growth is more abundant they are deprived of nourishment and diminished. This curtails the amount of fatty acids, mucus and other products of bacterial growth and lessens the stimulus to peristalsis normally exercised by these agents.

A sendentary life and certain diseases as anemia, neurasthenia and melancholia lessen the activity of the abdominal muscles and peristalsis, and constipation is not infrequent. Weakness of the abdominal muscles is oftimes found in women due to constrictions about the abdomen and repeated pregnancies.

The part played by the organic causes is not as important as the functional, and when present usually require surgical interference. Under this head may be mentioned uterine displacements, pelvic tumor, enteroptosis, perineal laceration, chronic appendicitis and gall bladder diseases. In children constipation is rarely congenital due to idiopathic congenital dilatation of the colon or Hirshspring's disease. The X-ray and barium meal have recently become of great assistance in arriving at the causes of constipation, especially the organic. By their aid we occasionally find kinks or adhesions usually occurring at the pylorus, terminal end of the ileum, cecum, hepatic flexure, splenic flexure or sigmoid. We find associated with these a dilatation of the proximal and collapse of the distal adjacent segments. In chronic appendicitis oftimes when the history may not point toward it, palpation of the cecum under the

fluoroscope after giving a barium meal, will oftimes reveal an adherent condition with tender point, and the cecum will be a cess pool for the intestinal contents. This has been found frequently in our X-ray laboratory during the examination of patients with constipation, the condition being relieved by operation and appropriate after treatment. In one case there was a constricting band about eight inches from the terminal end of the ileum with collapse of this portion resulting in partial obstruction and obstinate constipation. Every case of constipation should be given a barium meal and X-rayed before any treatment is instituted.

Medical treatment of constipation can be one of the most perplexing problems in medicine. The complete co-operation of the patient is imperative, for upon his perseverance oftimes depends the result of the treatment. He should be told in the beginning that it will be months before he is relieved, and several weeks before he notices much improvement. There is a tendency among some of them to discontinue the treatment after a few weeks, or when there are signs of improvement. He should be warned against doing this, for he will soon find out that he will again become dependent upon pills or other form of laxative to evacuate the bowels.

The following is an outline of treatment which we have used in the Highsmith Hospital with good results: Diet, exercise and regular habits are the most important parts in the treatment of constipation, and will cure the majority of the cases. As was pointed out in the beginning of this paper, there is a natural tendency to evacuate the bowel after breakfast. This should be taken advantage of and the patient instructed to sit on the stool for ten minutes after breakfast, whether there is a desire to evacuate the bowel or not. With some it is advisable to read or smoke during this time, as it will help in keeping them there when there is no desire to evacuate. In primitive man the act was accomplished in the squatting position. This gave the abdominal muscles a chance to work at a greater advantage. In using the modern stool the patient should bend over with the feet elevated on a six-inch block. At this time an enema or glycerine suppository may be used for the first ten days to assist in bringing about the normal desire every morning. They should not be continued longer than ten days on account of the tendency to depend on them for stimulation.

Before arising the patient should knead the abdominal muscles in the direction of the large intestines, or roll a ball weighing about five pounds from the cecum to the sigmoid. Exercises which develop the abdominal muscles are very important. The patient should be instructed in the different steps of the exercise to be taken, and directed to repeat each step from five to ten times every morning immediately after arising. The most useful of the exercises are as follows:

1. Standing erect with the legs together, bend the body as far to the left and then to the right as possible.

2. In the same position bend the body forward and downward until the finger tips touch the floor.

3. Lie on the floor or other hard surface with legs rigidly together and raise the body until it is at right angle with the limbs.

4. In the same position raise the limbs until they are at right angle with the body.

In those cases with pendulous abdomens and weak abdominal muscles, especially in women who have had repeated pregnancies, and after operations a properly fitted abdominal supporter should be worn.

In this class of cases would come one of organic orgin, namely: enteroptosis. These supporters not only aid in correcting the constipation, but by taking the strain off the muscles of the abdomen and back, make the patient much more comfortable when standing and walking.

The diet in constipation should exclude those foods which leave little residue after digestion, among which may be mentioned meat, eggs, milk, macaroni and cheese. Tea should not be taken on account of its astringent properties. Other foods favor catharsis, either by a laxative principal or by the bulk of their non-digestible residue which consists principally of cellulose. Those which have a laxative effect are most of the fruits, especially apples, oranges, prunes, grapefruit, peaches and watermelons and certain vegetables, as beets,

carrots, potatoes, cucumbers, spinach and tomatoes. As a means of making a patient eat fruits more freely, they should be instructed to begin with one prune each day and increase one a day until they are taking twelve, then continue with that amount. This impresses upon them the importance of fruits in their diet and stimulates them to observe more rigidly the rules laid down for them. Those which have a large residue are oatmeal, rye, corn, string beans, peas, cabbage, turnips and squash. It is advisable in these cases to give whole wheat bran to increase the intestinal residue. This may be taken in the cereal or with water at breakfast or made into muffins or bread, with or without the addition of white flour. As a rule after the patient has eaten the bread they will overcome the objection arising from its dirty brown look and will enjoy it as much or more than they do the white bread.

Buttermilk should be used freely on account of its lactic acid bacilli, but should always be in conjunction with the above mentioned foods. This list of foods cannot be strictly adhered to in some cases on account of individual's peculiarities; in those cases the offending parts may be eliminated and others substituted.

They should be instructed to drink large quantities of water, beginning with two glasses after arising and continuing throughout the day. This not only increases peristalsis, but aids in keeping the feces moist. Hard waters should not be used on account of their astringent properties.

The above method will usually relieve the ordinary cases of constipation, but there are some, especially in people over 40 years of age and those in whom the disease is of long standing, who will require medicines. There is only one medicine, if it may be called a medicine, that is given routinely in all cases of constipation, namely, some form of the mineral oils. This is given in half ounce doses before each meal for four months, morning and evening, for one month, and then as needed. Very rarely the patient cannot take it on account of nausea ,in which case it is discontinued and the bran increased or agar-agar substituted. In a few others the quantity of oil prescribed is too much, and will have to be reduced on account of the unpleasant effect of it passing from the rectum involuntarily.

For the first three weeks in cases of constipation of long standing or in old people it is advisable to give some simple laxative every day. Also in those cases which are not relieved by the usual dietetic or hygienic methods, laxatives should be employed. Cascara sagarada in the form of the bitter extract is the best drug to use. For the physic as well as the laxative effect it is best to begin with 10 M each night, increasing the dose one M a day until 30 M are taken, then decreasing in the same way.

In those cases with deficient bacterial action the use of bulgara bacilli in tablet form or solution is beneficial and should be given three times a day with the mineral oil; care being taken to see that the culture is fresh and kept cool, else the result from its use will be disappointing.

In those cases who cannot eat fruits without a great deal of disturbance and discomfort in the epigastrium it is advisable to prescribe some alkali, especially sodium bicarbonate and calcined magnesia immediately before eating the fruit.

Along with this treatment the general condition of the patient should be improved if needed. If there is anemia, neurasthenia or other constitutional diseases it should be corrected, or the treatment for the constipation will be unsatisfactory. If the patient's appetite is poor, nuxvomica, on account of its stimulating effect to peristalsis and appetite is the best tonic to use. Any defect as pyorrhea, abscessed teeth, diseased tonsils, etc., should be corrected in the beginning of the treatment.

The organic causes of constipation except enteroptosis, which has been mentioned, require surgical treatment, and will not be discussed in this paper. It will suffice to say that after proper surgical measures have been carried out the post operative treatment should include the re-education of the patient along the lines as outlined in the medical treatment.

The next annual meeting of the North Carolina Medical Society will be held at Pinehurst, N. C., April 26-27-28. The Health Officers' meeting will be April 25.

CASE REPORT OF FOREIGN BODY IN BRONCHUS*.

D. W. Holt, M.D., Duke, N. C.

Boy, age 14. Admitted Nov. 19. Prov. Diag. Foreign Body in Bronchus.

Chief Complaint: Cough and weakness.

Family History: Nothing known of the diseases of his family.

Past History: Measles and whooping cough some years ago. Never had diphtheria or scarlet fever. Occasional sore throat. No rheumatism. No headache, eye, nose or throat trouble. He says he has been "troubled with his breath" for several years, getting short of breath at times. He would go out into the air when he got these, but the exact nature of the dyspnoeia is not clear. Has had no oedema. History Present Illness: About Nov. 1st patient had five decayed teeth removed under nitrous oxide anaesthesia. Four days later he had fever. He developed cough immediately after removal of teeth. This cough has persisted to date and is productive of a muco-purulent expectoration. On several occasions immediately after paroxysm of coughing he has vomited. At present patient is very weak and somewhat dyspnoeic. His appetite is poor and he is drowsy much of the time. No symptoms referable to other systems. Does not know about loss of weight, but thinks has lost some. No night sweats. No constipation.

Physical Examination.

A young white male, complaining of cough and pains in the thorax. Cough seems dry. Temperature 100; respiration 48; pulse 108. Is anaemic. Not cyanotic. Some playing of alae.

Head: Scalp negative and ears negative.

Eyes: No jaundice. Pupils equal and react normally.

Mouth: Lips dry and sordes on teeth. Teeth show some decay. Tongue coated and dry. Tonsils enlarged and inflamed.

Neck: No enlargement of thyroid and no abnormal pulsations.

Thorax: Fairly well developed and expansion limited but equal. Anteriorly, apex beat wavy and visible in 6-n. i. s. anterior axillary line. The percussion note is hyperresonant over both sides and over the cardiac area (tympanitic note) and also in upper axillae. Posteriorly, percussion note is hyperresonant above, but over area of left lower lobe impaired. Hyperresonance over right lower lobe. Breath sounds, harsh over lower left posteriorly and voice sounds plainly transmitted. Breath sounds and voice sounds absent over right lower thorax posteriorly and over anterior right thorax. Breath sounds distinctly heard over anterior left side. No rales heard.

Heart: Apex beat plainly visible in 61 i. s. and is palpable 11 c.m. from midsternal line. No thrill felt. Hyper-resonant (tympany?) over cardiac area and heart sounds somewhat distant except at area of visible apex beat. No murmurs heard. Pulse rapid, regular, and soft. B. P. 90—40.

Abdomen: No rose spots. Some fullness. No rigidity or tenderness or ascites. No palpable masses. Liver and spleen not felt.

Ext. Genit. Neg. Reflexes normal.

Prov. Diagnosis:

1. Tooth or some other foreign body in bronchus.
2. Pleural effusion on right side.
3. Consolidation left lower lobe?
4. Pneumo-pericardium?

X-ray Report: There is a very large pneumo-thorax of the right side, a consolidation of the right lower lobe, a certain amount of free fluid in the left side, and an hydro-pneumo-pericadium. There is a tooth in the right lung, in the lower branch of the right bronchus.

(Stereoscopic Plates and Fluoroscopic Examination).

Temperature range: 99—102.
Pulse range: 96—120.
Respirations: 36—48.
Urine: Negative.
Leucocytes: 230000.

Nov. 22: Patient was transferred to Jefferson Hospital to be under the care of Dr. Chevalier Jackson, who, immediately and successfully removed the tooth. The patient made an uneventful recovery.

*Read before the Fifth District Medical Society, Sanford, N. C., December 16, 1920.

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SOUTHERN MEDICINE AND SURGERY

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M. L. TOWNSEND, M. D.
J. C. MONTGOMERY, M. D. } *Editors*

CHARLOTTE, N. C.

"Read not to contradict and confute, nor to believe and take for granted, nor to find talk and discourse, but to weigh and consider."—Francis Bacon.

WHY A NEW NAME.

In coming to you today under the new name which we have assumed,"**Southern Medicine and Surgery**," we do so with all modesty. We wish to assure you our only purpose is the hope that thus we can better serve the profession in our section of country and also that thus we may be able to stimulate a more hearty co-operation from doctors everywhere.

The trend of the present times in every line of endeavor now indicates a keen competition, and no individual, or group of individuals, or institution, is going to succeed that don't "deliver the goods."

The medical profession is no exception, and the doctor who gets on in this world simply must get results. His results will be measured by his success in preventing disease, relieving suffering and prolonging human life.

"The man good at making excuses seldom is good for much else," and the public are everywhere finding out that the doctor who has maintained his prestige by glib talk without creditable results must be relegated to the scrap heap.

The only purpose "Southern Medicine and Surgery" has for existence is that it may aid in some degree to disseminate the best and most practical information and advice that will help every doctor to actually get results. Beside this we wish to use our every influence in promoting the best good of the individual doctor himself and the profession in general.

We have felt that there might be doctors somewhere who sub-consciously considered the Charlotte Medical Journal a local enterprise used for the purpose of exploiting the doctors for selfish or local good. This possible assumption is just as far from the truth as can be. We are proud of our town and her doctors—if we were not we would move on to a more congenial clime—but we are more concerned in the best good of the medical professoin.

The forerunner of the Charlotte Medical Journal was founded in 1877. A venerable name would not be lightly sacrificed except for the hope that by so doing a greater good might be accomplished and a broader field of usefulness served.

Then, doctor, let's put all the cards on the table; let's be perfectly frank. "Southern Medicine and Surgery" must have your whole-hearted support and enough financial support to make it possible to pay our bills and secure for you the very best service—nothing short of the very best will be satisfactory or permitted .

Each issue will accurately reflect the encouragement YOU give.

THE CRIMINAL INSANE.

The public press announces that legislative investigation of cruelties and the present system of corrective measures at the Michigan State Penitentiary promises a complete reorganization of the penal system.

Throughout time, the individual who, for whatever reason becomes a menace to those about him has very properly been forcibly restrained. For all too long a time this then was accepted as the final answer and forcible restraint was the "cure all" for everything.

In the Michigan prison it is claimed that mental incompetents were cruelly punished for their abnormal acts. Some, even, who were so obviously mentally incompetent that they had previously been committed as patients at the State Hospital for the Insane.

As a result of this investigation, Senator John W. Smith, chairman of the prison committee, says that corrective bills will be introduced before the Legislaturre, the first of which will make it a crime for a prison official to inflict torture.

The fault is not with Michigan's prison officials. They no doubt are just as

efficient and as humane officials as those in any state. The fault is ignorance on the part of the public in demanding that every individual who has become a menace be dumped into one big hopper and there manhandled in exactly the same way that all others are. This is a custom of the ages and is the result of our supreme selfishness—and former ignorance. It is so much easier to lock the door on a sick man and there let him live or die than to sacrifice (?) time, labor and expense trying to get him well. The generations have said this man is a menace, he interferes with our personal desires, rights and pleasures, lock him up. Hire a big strong man (strong by reason of weapons or physique) to guard him. There the matter is ended and the public has then ever gone complacently on with its individual desires, rights and pleasures, purposely forgetting the unfortunate fellow. Of course, the guard has used some form of force. Fundmaentally that is just what he was hired to do and instructed to do. The people who hired him won't admit it but secretly that is just what they want him to do—anything just so the victim don't bother them any more.

On page 149 of the October, 1920, issue of this Journal we made the statement which we wish to repeat. "A normal man cannot be a criminal, for if he is a criminal there is or has been something wrong somewhere, sometime."

The very fact of his showing criminal tendencies is prima facie evidence of abnormality. This is just as obvious as that a body temperature above the normal as fixed by nature's laws is evidence of some physical abnormality.

Those who direct a few governmental units have seen the light and recognized that criminality is abnormality and have been influential in bringing about measures for really and fundamentally correcting the time honored custom of brutality in handling and caring for mental defectives. Although most states recognize the efficacy of a state laboratory in diagnosing physical disease and have employed trained men whom they call public health officers to combat the menace of preventable diseases yet very few have employed a "laboratory," in the form of a competent examining board, to diagnose the various forms of criminal insanities and neither have they employed prison officials whose duty it shall be to work as criminal doctors striving to cure rather than manhandle.

Of course such officials must at times use restraint and make a show of force. It certainly would be unreasonably foolish to decree it crime, without taking into consideration the immediate circumstances, to use such force or any other measures which the exigencies of the case demanded.

It is not the guards or prison wardens we have employed that are at fault—it is the system our personal selfishness and heartlessness has long condoned, that should be revolutionized.

In claiming that every crime is the result of some abnormality and in a plea for a square deal for every so-called criminal we most emphatically do not wish to give such persons any more opportunity to jeopardize the rights, lives and happiness of the community, for on the other hand we plead for more careful protection of the community by more careful study and protection of the defective.

Every individual who becomes a menace to himself or others should be carefully examined by competent authority, his case should be diagnosed and his treatment should be determined, in the light of every available fact and condition, to meet that individual case.

With our present limited light and knowledge it may be impossible to definitely say when any mental defective with criminal tendencies has been cured and hence the watchful care of the state's criminal "health officers" should follow him either closely or distantly so long as he lives—that is in the terms of the doctor the case should never be unconditionally discharged and the case record closed.

The next meeting of the Tri-State Society will be held in Spartanburg, S. C., Feb. 16-17.

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MEDICINE

Edward J. Wood, M.D., Dept. Editor.

Medical Zoology and Public Health.

In many parts of the world, especially in the tropics and subtropics, animal parasites and the animal carriers of disease-producing organisms are of far-reaching significance to the welfare of the inhabitants. Robert W. Hegner, Baltimore (Journal A. M. A., Dec. 11, 1920), says that better methods than are now available for eradicating or controlling these parasites and their vectors cannot be expected until the medical zoologists have made more thorough studies of the life cycles, biology and relations to environment of the organisms concerned. At the School of Hygiene and Public Health of the Johns Hopkins University, investigations are now in progress on the classification, morphology, physiology, life histories and reproduction of blood-inhabiting and intestinal protozoa, trematodes and nematodes, and mosquitoes and house flies. Other investigations now in progress have more definite practical aims, such as attempting to aid in the solution of the soil pollution problem by improving methods of fecal diagnosis; by studying such phases of the biology of the hookworm as the viability of the eggs and larvae in the soil; by determining the effects of the larvae of parasitic worms during their migration through the tissues of their hosts; by attempting to discover the thermal death point of protozoan cysts, the effects of moisture and chemicals on them and the relations between them and the insects that may be their vectors; by studies of relapse in malaria; by serologic investigations of this disease, and by biologic researches on mosquitoes. Medical zoology has an important function in public health education. The ordinary physician has usually had but little training in public health subjects, and this generally does not include studies in medical zoology. Since most health officers are selected from among the physicians, the result follows that few public health officers are acquainted with the animal parasites of man.

Epidemic Hiccup.

Europe, and now this country, seems to be passing through what appears to be an epidemic of hiccup. This disturbance is usually the subject of humor rather than of medical concern, and it is seldom given the serious attention which it probably merits. Pathologically it seems to be associated with irritation of the phrenic nerve, from gastrointestinal disturbance, from neuroses, or from remote disturbances of the central nervous system not as yet determined. The irritation may be of peripheral or central origin. In pneumonia or typhoid fever, hiccup, perhaps due primarily to the effects of bacterial toxins, may be a serious complicating factor, even causing death. Unless hiccup persists for an undue length of time, preventing the patient from securing rest or from continuing his ordinary occupation, it attracts little notice. However, in the epidemic through which we now seem to be passing, many cases have occurred in which patients hiccuped as frequently as every three or four seconds for periods of a week or longer. Lhermitte points out that the first appearance of the epidemic of which he knows occurred in Vienna in the winter of 1919-1920, and was reported by Economo. Large numbers of persons were suddenly attacked with uncontrollable and almost incessant hiccup rebellious to all treatment. In most instances the disturbance ceased spontaneously in a few days, although in one case the hiccup persisted for a month, the patient having only a few hours of rest each day. The hiccup seems to have been associated with the outbreak of epidemic encephalitis, and it is Lhermitte's belief that the association of such epidemics with epidemics of lethargic encephalitis indicates a causal connection. He states that five well-known French clinicians, including Netter, are in accord with this belief. Although epidemics of hiccup have been reported for centuries, there is no specific or even effective treatment. Two methods of treatment have been suggested, the first attempting to reduce the hyperexcitability of the medulla, the spinal cord and the phrenic nerve through the use of sedative and narcotic drugs, and the second attempting to exert an inhibitive influence by physical measures on the nerve centers in

reflex erethism. The number of these physical measures is legion. They include pressure on the spine (Nothnagel, Rethy), compression of the arms (Piretti), pressure on the ulnar nerve (Pauzot), pressure on the eyeballs (Sicard and Paraf), influencing the diaphragm by forcible flexion of the legs (Jodicke) or by an apparatus (Boyer, Rostan), distention of the esophagus by swallowing a chunk of bread or something similar (Sicard and Paraf), distention of the stomach (Kanngiesser), ice-bag to the stomach region (Eloy), direct compression of the phrenic nerve against the scalenus muscle (Leloir, Grognot), faradization of phrenic nerves (Dumontpallier) and traction on the tongue (P. Lepine). All of these measures have failed in some cases, and their chief recommendation is that sometimes they seem to be effective and that in general they are harmless. The significant fact brought out is that there may be a relationship between epidemics of encaphalitis and of hiccup. This point merits more thorough investigation.—Jour. A. M. A., Jan. 22, 1921.

Gynecology and Obstetrics

Robt. E. Seibels, M. D., Department Editor

Sera and Vaccines in the Treatment of Puerperal Infection. Brit. M. J., 1920, ii, 269. H. L. Murry.

In summarizing the present-day knowledge of sera and vaccines in the treatment of puerperal infections Murray states that this type of treatment is not yet sufficiently well established to justify implicit trust in it.

Attention must be paid to details and due regard given to the patient's condition, the amount of serum or vaccine administered, and the method of administration. A few cubic centimeters of serum given subcutaneously to a moribund patient will neither prove nor disprove the efficacy of the method.

The first essential is a correct diagnosis in order to exclude such factors as pyelitis, untreated lacerations, and peritonitis. Peritonitis requires surgical care.

Treatment must be instituted early and an effort made to isolate the organism. In a series of 196 patients with puerperal sepsis 46.4 per cent gave a positive blood culture and in 93 per cent the organism was proved to be a streptococcus. A carefully taken blood culture is the best means of obtaining material for an autogenous vaccine. Time should not be lost, however, in waiting for such a vaccine. Antistreptococcus serum should early be diluted with an equal volume of normal saline and given intravenously in large doses (50 ccm.). If no improvement is noted in from twelve to twenty-four hours it is well to repeat the dose, using a different brand of serum. An antistreptococcus serum, being bacteriolytic, requires a complement, and it may be advisable to give 5 cc. of fresh sterile guinea-pig or horse serum.

Murray does not advocate the use of stock vaccine except in an emergency. In some autogenous vaccines have proved themselves of definite value. One observer reduced his mortality from between 85 and 95 per cent to 55 per cent by this means. The doses given should be small and, in streptococcal infections, given preferably with serum. Treatment with immunized serum appears of value in cases of pyaemic infection.

The author withholds judgment regarding the relative values of vaccines prepared by heat or antiseptic, and detoxicated vaccines. Treatment must not be instituted on a definitely fixed scale, but should be varied to suit the case. The use of partially devitalized bacteria in a vaccine is open to objection.

The X-Ray and Hydatiform Mole (Rayos X y mola hidatiforme). Rev. espan. de cirug., 1920, ii, 144.

While the etiology and pathology of neoplasms are not yet understood they are assumed to be based on biological reactions. The process by which the placental tissue undergoes degeneration and becomes gradually detached from the uterus and the causes which produce these changes are not well known. According to all of the theories advanced to explain the pathology of hydatiform moles the influence of the ovaries is an important factor. Opinion varies as to the changes in the ovaries. It is possible that cystic degeneration occurs in the corpus luteum, but in the author's opinion this change takes place in the follicle.

To show that the action of the X-ray on the ovaries may give rise to the formation of hydatiform moles a case of metrorrhagia is reported. The patient had had several exposures to the X-ray and was relieved of symptoms for a short time. The sudden onset of metrorrhagia followed, however, with the expulsion of foreign objects simulating grapes. These proved to be hydatiform moles.

Hirsch states that the X-rays produce marked changes in the ovarian tissue and that if a woman whose ovaries have been exposed to the X-rays gives birth to a child, the child will be abnormal. No mention has been found in the medical literature concerning the X-rays as an etiologic factor in the formation of hydatiform moles. The author finds that they produce marked changes in the graafian follicles but practically no change in the corpus luteum. According to Fraenkel and Neorchaud, it is generally believed that changes in the corpus luteum will stimulate the growth of placental tissue. If this theory is correct, it is not probable that the X-rays have any influence on the formation of hydatiform moles.

No relation between the co-existence of cysts of the corpus luteum and hydatiform moles can be shown. In several instances the cysts of the corpus luteum disappeared after the mole was expelled, and on the other hand hydatiform moles have been found in the presence of a normal corpus luteum.

Blanco reports one case of hydatiform mole with normal corpus luteum and slight changes in the graafian follicles (cystic degeneration and "sclerosis" of the cortical portion of the follicle).

In conclusion the author states:

1. Hydatiform moles originate from placental tissue and their formation is influenced by changes in the ovaries.

2. Changes in the graafian follicles are responsible for the formation of hydatiform moles.

3. Hydatiform moles may cause cysts of the corpus luteum.

4. The action of the X-rays on the ovarian tissue may produce hydatiform moles.

5. The ovaries should not be exposed to large doses of the X-rays.

6. Panhysterectomy without previous curettage is the operation of choice for hydatiform moles.

DeLee: Trichomonas Vaginalis Vaginitis. Illinois Medical Journal, 1920, xxxvii, 186.

DeLee calls attention to this type of obstinate vaginitis, which is not rare. It usually proves most refractory to the customary types of treatment, because it is not properly diagnosed. Its clinical symptoms are persistent, and the profuse vaginal discharge, causing much annoyance to the patients on account of burning and pruritus, by way of sleeplessness leads to a neurasthenic "run down" feeling. The discharge is acrid, of a disagreeable odor, very irritating, and often causes the formation of pointed condylomata. The peculiar, granular appearance of the vaginal mucosa, "rough like a nutmeg grater," usually with small hemorrhagic points, almost enables one to make the diagnosis, which, however, must be confirmed by a microscopic examination of fresh vaginal discharge for the characteristic Trichomonas vaginalis. The writer found the following treatment most effective: On the first day, vagina and vulva are most carefully scrubbed, vigorously, with tincture of green soap and water by means of a rough cloth. The soap is rinsed out with distilled water. The process is repeated three times, followed by a 1:1500 mercuric chlorid douche and finished with another douche of distilled water. The patient is kept in bed. Next morning, the vagina is again scrubbed with green soap and sterile water, and then packed with cotton soaked in glycerin (4 ounces) and sodium bicarbonate (1 ounce). The next morning, cotton is removed and sterile water douche is given. As a rule, on the next following day the microscope will prove the disappearance of the trichomonas.

Urology

A. J. Crowell, M. D., Department Editor

Syphilitic Scars of the Spirit.

In this paper (Journal A. M. A., May 1, 1920), Joseph Collins, New York, discussed the various phases of syphilis of the nervous system, especially of cerebral syphilis. Ten years' experience in the use of arsphenamin and mercury in the treatment of syphilis of the nervous

system have given him abundant opportunity to witness cessation of the progress of syphilitic nervous disease. In many cases the syphilitic disease was conquered, but the functional restoration was not complete. For instance, a tabes may be brought to a standstill, and the only evidence of the syphilitic scar is sexual impotence or slight impairment of vesical tonus. On the other hand, syphilitic meningo-encephalitis or syphilitic encephalitis may after recovery leave a scar which displays itself in altered behavior of the patient which is apparent only to those who come in intimate contact with him, in slight impairment of his intellectual and emotional capacity, which, although slight, is enough to shape his career, turning it from success to failure. In other words, the patient is left with a scar of his mind and his emotions which permanently cripple him to a certain degree. It is easy to measure this degree by psychometric test; but the most telling way of expressing it is to say that it has thrown him from the social, civic, marital, financial level that he had attained, which was a commendable one, to a much lower one at which he can barely support himself and can make no contribution to the welfare, the interest or the support of others. Had he been reduced another peg he might have become a hobo, a wanderer or a charge on his family or the community.

Such experiences as these teach that syphilis of the nervous system is a curable disease; but the lesson to be learned from it is that the earlier the treatment is instituted the greater is the victim's chance of complete functional recovery. A very interesting case in point is cited.

Arsphenamin Reactions.

Inasmuch as printed directions accompany each ampule of arsphenamin, no matter of what brand, and are specific and easy to understand, John F. Martin, Boston, Mass. (Journal A. M. A., May 1, 1920), considers that it is laxness in following these directions that accounts for the greater number of reactions to treatment. When a trained and careful person prepares the solutions of arsphenamin, reactions will seldom occur in hospital clinics or in private practice. He outlines the necessary precautions which must be taken as well as the factors attributable to the patient. Reactions to arsphenamin treatment are a warning signal that there is a cause to be found, and that a review of the patient's history, physical condition, the brand of arsphenamin used, and the technic of preparing the solution and administering it to the patient should be undertaken.

Determination of Cure in Gonorrheal Infection of the Male.

Cultures of prostatic and seminal fluids and first urine sediment, carefully collected, according to Russell D. Herrold, Chicago (Journal A. M. A., Jan. 22, 1921), are the most reliable single means of determining whether or not gonorrhea is cured. For this purpose, phosphate agar with blood and ascites fluid is suitable, and the inoculated plates should be incubated under reduced oxygen tension. The complement fixation test is a valuable aid, but the results should be taken in conjunction with the cultural results. Low degree positive fixation may persist up to a year after positive smears and cultures can be obtained. However, with positive serologic reaction, cultures should be repeated at intervals and the patient kept under observation until the serologic tests give negative results. The gonococcus may be identified by agglutination tests with polyvalent antigonococcus serum. A satisfactory antigen can be easily prepared as described in the article. The precipitin test appears less sensitive; but because of its greater simplicity, it may be used as a substitute for complement fixation under special circumstances. The use of provocative tests before taking cultures and smears is of no advantage. The pus cell content of smears and macroscopic urinary appearances may be misleading, and by themselves constitute no safe index of cure.

Improved Method for Demonstration of Spirochaeta Pallida in Tissues.

Aldred Scott Warthin and Allen C. Starry, Ann Arbor, Mich. (Journal A. M. A., Jan. 22, 1921) present a method which they consider as great an improvement on the first method proposed by them as that was on the older methods, in that it possesses these advantages: (1) The time is much shortened; the entire procedure may be carried out in less than one hour after the sections have been mounted on cover-glasses.

(2) The results are more certain. Spirochetes have been demonstrated in tissues by this method when all others have given negative results. Tissues are fixed in neutral formaldehyd, embedded in paraffin. Sections are cut and mounted on cover-glasses with albumin fixative. The paraffin is removed with xylene, alcohol, water. Next the cover-glass is rinsed with section in 2 per cent. silver nitrate; the wet section is covered with another perfectly clean cover-glass, so that they are held together by capillary attraction; then they are placed carefully in a bottle of 2 per cent. silver nitrate and placed in an incubator for from thirty minutes to one hour. They are removed from the silver nitrate and cover-glasses separated. The cover-glass with the section is then placed in this reducing mixture:

	C.c.
Two per cent. silver nitrate solution	3
Warm glycerine	5
Warm 10 per cent. aqueous gelatin solution	5
Warm 1.5 per cent. agar suspension	5
Five per cent. aqueous hydroquinone solution	2

After the section is reduced, it is removed and rinsed in 5 per cent. sodium thiosulphate (hyposulphite) solution; rinsed in distilled water and mounted—absolute alcohol, xylene, balsam. The method is described in detail.

MENTAL AND NERVOUS.

Jas. K. Hall, M. D., Dept. Editor.

The Editor of the Department will devote his attention mostly to a review and an abstraction of such of the current literature as presumes to attempt to offer an explanation of human conduct, both in its normal aspects and in its departure from so-called normal, whether this deviation manifests itself in the physical or in the mental domain.

Long ago Emerson said: "The ingenuity of man has always been dedicated to the solution of one problem—how to detach the sensual sweet, the sensual bright, from the moral sweet, the moral fair; that is, again, to contrive to cut clean off this upper surface so thin as to leave it bottomless; to get a one end, without another end. The dividing and detaching is steadily counteracted. Up to this day, it must be owned, no projector has had the smallest success."

The forces of nature may not act in blindness, but there is little evidence in substantiation of the belief that consideration of the individual's welfare is taken into account. Gravity is of like help to the miller and to the hangman. The end of education is to fit one to live in harmony with the forces of nature; ignorance disregards or opposes them. The results is sickness, unhappiness, failure, degredation, death. But nature is as active in the spiritual and in the moral world as in the physical and in the economic. What gets the bootlegger, the thief, and the libertine, of lasting value? State, medicine, preventive therapy, social and mental hygiene —all are founded on the basic truth that action is followed by reaction. They say to us: "Stop, look, listen; reaction comes!"

What a pity the department editor cannot spread before this journal's readers in the charming style in which the book is written a review of "Accepting the Universe," by John Burroughs. Back over eighty-four summers and as many winters he looks, and after close and intimate association with the ways of nature throughout all these years he comes to the conclusion that this is the best possible world in which one could wish to live. Wise self-adjustment brings happiness; to kick against the pricks is the cause of all unhappiness.

Even medical men have been somewhat slow in learning the fulness of the truth that man cannot live by bread alone. Under the caption of "The first case of Myxedema treated by thyroid extract." Endocrinology for October-December, 1920, reviews in an editorial of some length and detail the first case of hypothyroidism successfully treated by thyroid gland administration. The editorial is called forth by a contribution to the British Medical Journal for January, 1920, by G. R. Murray. The patient, a woman of 46, was presented to the Northumberland and Durham Medical Society in February, 1891. She exhibited all the clinical evidences of low thyroid functioning, mental as well as physical, and Doctor Murray boldly made the diagnosis and outlined the thyroid medication that would be instituted. A glycerinized extract of the fresh

thyroid gland of a sheep was prepared, and of this extract 25 minims were given hypodermically twice a week. The improvement in the woman's condition was at once evident. Later smaller dosage at less frequent intervals was indicated, and still later 10 minims were given by mouth six times a week. Complete recovery followed, but thyroid injection was continuously necessary. The woman died of cardiac failure in 1919, and in the 28-year period of thyroid medication "She consumed over nine pints of liquid thyroid extract, prepared from the glands of more than 870 sheep." Since that comparatively recent date how many lubbery, half idiotic hypothyroid children of darkness have been brought into the light of useful and happy lives!

In Archives of Neurology and Psychiatry for January, 1921, Paul Weston, a member of the medical staff of the State Hospital at Warren, Pennsylvania, records the results of his observation of the absorption of a certain solution which had been injected into the spinal fluid of human beings. One c. c. of neutral, sterilized solution of phenolsulphonephthalein, having a specific gravity of 1.0061, was injected into the lumber subarachnoid space and the contents of the needle washed into the canal with 15 c. c. of previously withdrawn spinal fluid. All the observations were made on mental patients—28 of whom had catatonic dementia praecox, and 17 paresis. In the praecox cases the spinal fluid gave a negative Wassermann reaction, but in the paretics the test was unfailingly positive. In these observations the dye appeared in the urine in the case of the catatonics in from 25 to 104 minutes, and in the paretics the appearance-time of the dye in the urine was from 12 to 68 minutes. Normally, according to Dandy and Blackfan, the dye can be found in the urine 6 minutes after its injection into the lumbar subarachnoid space.

The Department Editor finds himself wondering, however, if in certain cases the spinal fluid may not make its escape from the spinal canal into the tissues along the path of the withdrawn needle. It seems not unreasonable to suppose that in certain instances the dural puncture may not close as the needle is withdrawn, and that in other instances it may be closed by an arachnoid plug. In the former case leakage from the canal would result; and absorption would be hypodermic and not from the intraspinal canal proper. The interesting feature of the observation is, of course, to ascertain whether or not the spinal fluid is a proper reservoir in which to lodge specific medication.

All students of so-called bad children who exhibit truancy, incorrigibility, and criminal tendencies will recall the large volume on the "Individual Delinquent," by Dr. William Healy. In the December, 1920, number of Archives of Neurology and psychiatry Healy writes about "Nervous signs and Symptoms as related to certain causations of conduct Disorder." He resorts to mental analysis which for lack of time had to be made always hurriedly and consequently not profoundly. In practically every instance, however, some nervous manifestation or some physical discomfort served as a cue which gave direction to the mental inquiry. A little girl of 13 engaged in orgies of stealing in spite of sharp discipline and even after corporal punishment. A feeling of dizziness and nervous unrest always precipitated a stealing debauch. Healy discovered that these dizzy spells were always associated in her little mind with the memory of a bad boy who taught her unpleasant things about sexuality, the very thought of which made her miserable. A complete analysis of the situation resulted not only in the cessation of the stealing, but the dizzy spells came no more.

Numerous other case-citations are illustrative of the fact that bad child-behavior is often a reaction against mental injuries which the child does not understand, or indeed has even forgotten. The article serves the double purpose of demonstrating the value of mental analysis, and of emphasizing the fact that the psyche is even more susceptible to damaging injuries than the physical being. The manifestations of psychic traumata are much more obscurely related to their causes than physical injuries are to their causes, and, consequently, such diagnosis are difficult—but nevertheless they are of immense importance.

Orthopædics

Alonzo Myers, M.D., Dept. Editor.

Movable Bodies in Knee Joint.

Dr. O. F. Lamson, Seattle: Among the movable bodies to be considered are: osteocartilaginous loose bodies; dislocated semilunar cartilage; degenerated fat pads, due to chronic disease, such as tuberculosis and syphilis; sesamoid bone in the internal head of the gastrocnemius; a loose body, and joint lipomas. With manipulation, forced flexion and sudden extension, the offending loose body may usually be dislodged. Only surgery will give lasting relief. During operation the joint should be subjected to as little trauma and injury as possible, and more than the ordinary care should be taken to guard against infection. If the complete exposure of the joint is required, the longitudinal division of the patella may be imperative. But this procedure naturally entails more injury to the joint than the safer longitudinal incision of the external surface of the joint. The diagonal incision following the internal line of the joint is preferable for the removal of the internal semilunar cartilage and other free bodies within the joint.

Discussion:

Dr. M. S. Henderson, Rochester, Minn.: The loose bodies in the case cited seem to have their origin, not from the internal condyle of the femur, but from the tibia. This is very unusual, and the only instance that I know of such an origin of the body being demonstrable.

Discussion:

Dr. E. M. Sala, Rock Island, Ill.: I reported a case several years ago in which five loose bodies in the knee joint were removed by open operation, and the knee put at rest for six weeks with perfect restoration of the joint.

Discussion:

Dr. John P. Lord, Omaha: In a case I saw some years ago, I made a free transverse section, including the patella, clipping off some of these bodies which were attached anteriorly. The free access afforded by the ample exposure permitted the removal of the bodies in the condylar pouches. The largest of these bodies was one and three-fourths inches in diameter, and was doubtless formed by a section of the joint becoming detached.

Journal of Orthopaedic Surgery, Lincoln, Neb., Dec., 1920, 2, No. 12.

System of Joint Measurements—All joint movements are measured by Clark on a half circle are from 0 to 180 degrees. The zero end of this arc is toward the head and the neutral position is 180 degrees for all movements except rotation. For rotation, including pronation and supination, the zero end is toward the median body line (on the left for the spine) and the neutral position is 90 degrees. Extension is a movement toward 180 degrees and flexion toward 0 on the flexor half circle arc in the anteroposterior plane. Hyperextension is a movement toward 0 on the half circle arc on the extensor side of the joint in the anteroposterior plane. Abduction and adduction are both movements toward 0 in the lateral plane, the former on the half circle are lying external to the joint, and the latter on the half circle lying internal to the joint. Internal rotation is toward 0 and external toward 180 degrees on the anterior half circle arc in the transverse plane. For the spine rotation to the patient's left is toward 0 and to his right toward 180 degrees. The number of degrees stated in records by this system indicates the limit of motion on the half circle scale and not the amount of motion.

Volkmann's Contracture—Collins reports a case, in the Illinois Medical Journal, December, 1920, 38, No. 6, in which lengthening of tendons was resorted to with good results attending. He regards the procedure as much more simple than a resection of the bones of the forearm. The final result in his case shows no deformity, while a resection of the bones of the forearm would have left a shortened forearm. This patient was received into the service without question during the late war and served his required time in the army.

Bone and Joint Tuberculosis—By Dr. Scharff. Archiv. f. Orthopaed. und Unfall-Chirurgie. XVIII Band. 1-2 Heft. 1920. Seite. 282.

The treatment of bone and joint tu-

berculosis has in the last few years undergone various changes. The purely operative procedures, especially the joint resection, has been more and more abolished. Of all operations Albee's has survived the test and has proven useful and efficient in the hands of most orthopedic surgeons. Except the latter, no other extensive surgical procedures are practiced; only puncture of the tuberculous abscesses and suppurating joints followed by injections of 5-10 per cent Iodoform-glycerin or Iodoform-Humanol (humanfat) or Iodin-Iodoformglycerin is still advocated.

The conservative treatment consisting of immobilization of the affected extremity in plaster of Paris splint or jacket for spinal tuberculosis is the therapy at present in vogue. Natural and artificial sunlight, and the specific tuberculins are extensively used and advocated by the various authorities of this subject, in addition to the rest of the diseased parts. Of the specific treatment is mentioned the partial antigen of Much-Deyke and the Friedmann's tuberculin. The latter has gained many adherents who have reported favorable results particularly in the beginning stages of bone and joint tuberculosis. Much-Deyke partial antigen is used therapeutically and diagnostically; it is recommended particularly for the purpose of diagnosis in doubtful cases.

State Medicine

L. B. McBrayer, M. D., Department Editor

Direful Facts for the Anti-Vaccination Cult.

We who live amid the personal safety that vaccination against smallpox has brought are likely to fail to realize its blessings. It is true that now and then, as recently occurred in California, intelligent, public spirited citizens, following the leadership of the medical profession, are compelled to come to the defense of vaccination as a public health measure against the bigotry of misdirected effort. In general, however, the institution of vaccination no longer needs a champion. If smallpox were permitted to become a pandemic raging over the entire world, as it certainly would if the disease were not held in check by compulsory vaccination, it would still the fears, as Councilman once naively remarked, of those who dread an excess of population. The expected mortality from smallpox can be computed with reasonable approximation on the basis of available data. The probable morbidity is not so easily estimated. The statistics of smallpox are like those of the incidence of starvation. A student of the subject humorously remarked that in countries in which smallpox and famine occur there are no statistics; in places where statistics are found, smallpox and famine are missing. However, Kisskalt and Stoppenbrink of Kiel have succeeded in collecting data of the occurrence of disease in the city of Konigsberg from 1773 to 1803, before the days of vaccination. Although the individual years showed great differences in the numbers of cases of smallpox, freedom from its presence was never attained. The danger to the patient was in general greatest during the second year of life. The astounding outcome of the statistical investigation is that out of every hundred children born during those eventful years, an average of eleven (and sometimes as many as fifteen) were destined to die of smallpox before they reached their tenth birthday. We recommend these facts to those cults and persons who still dare to threaten a return to comparable conditions of the neglect of public health.—Jour. A. M. A., Jan. 8, 1921.

The Passing of the Interdepartmental Social Hygiene Board.

As reported elsewhere, the House Committee on Appropriations has cut out of the Sundry Civil Bill the appropriation of $2,246,924 for the Interdepartmental Social Hygiene Board. It is to be hoped that the Senate will concur in this decision. Such action will practically abolish this organization. The Interdepartmental Hygiene Board was created to meet a war time emergency. It is one of the few war bodies that has refused to demobilize. Instead, it has sought to establish itself as a permanent peace time organization. It has endeavored to extend its activities and to secure increased appropriations. In developing its program, it has shown an inability to distinguished between measures for the proper regulation of public health and those intended for the con-

trol of public and individual morals. It is clearly duplicating the work of the Division on Venereal Diseases of the United States Public Health Service. Its policy requires a growing personnel, a bureaucratic system of centralized administration, the distribution of federal money for state and local activities, and the control or dictation from Washington of state and local policies. Any one of these reasons is ample justification for the elimination of this organization, the need for which has long since disappeared.—Jour A. M. A., Jan. 8, 1921.

Sex Education and Venereal Disease.

Washington—Does sex education begin too late to be of real service in safeguarding young people against venereal disease is the question raised in a recent report issued by the U. S. Public Health Service. The authors of the article, Dr. C. C. Pierce, assistant surgeon general, and Edgar Sydenstricker, statistician, are careful to explain that the statistics available as to the ages at which the disease is most often contracted are as yet too scanty to do more than suggest the question and cannot answer it.

These statistics, so far as they go, however, suggest that children, especially those of the class which is ordinarily considered most likely to be infected, leave school long before the age at which sex education in regard to the twin diseases is commonly given. The earliest incidence as shown by these records appears in men at the age of 15 and shoots swiftly upward at 16, reaching maxima at 19 and 23. After 23 it drops as rapidly as it rose. Attention is called to the apparent significance of the fact that the ages between 16 to 23 are those between the most usual ending of school and the beginning of married life. For the women the incidence of the diseases ranges about two years earlier than in men.

The Public Health Service is now engaged in assembling and tabulating a very much larger number of cases that will probably give much more definite results.

The next annual meeting of the North Carolina Medical Society will be held at Pinehurst, N. C., April 26-27-28. The Health Officers' meeting will be April 25.

X-Ray and Laboratory

Robert H. Lafferty, M. D., Dept. Editor.

In the Journal of the A. M. A. for January 22, 1921, Murphy, Witherbee and others give a preliminary report of the work at Rockefeller Institute on the "Atrophy of the Hypertrophied Tonsils With X-Ray." In the January issue of the American Journal of Roentgenology Witherbee gives a fuller report of this work. The following is an abstract with quotations from these articles:

The first case was treated in December, 1919, and at the end of the fifth week after the first treatment the tonsillar mucous membrane was smooth and the surface was pale and glazed looking. A second treatment was given and at the end of eight weeks the tonsils were reduced to about one-fourth their former size and the patient has had no further trouble from them.

A series of sixty cases, varying in age from 16 months to fifty years, was started. A history of each was taken, blood counts made, cultures from the crypts plated and drawings of the throat was made. Occasional misroscopic section was made at different intervals along with the drawings and cultures. The sum total of the results might be summarized: a decrease in the size of the tonsil, a drainage of the crypts causing the bacterial count in 32 out of the 36 cases showing haemolitic streptococci and staphylococci, became negative for pathological organisms four weeks after the first massive dose.

"It is generally conceded by most writers on the subject that the increased size of the tonsil depends directly upon the increase of the lymphatic tissue. The follicles appear larger than normal, are less sharply outlined and usually the germinal centers are quite prominent and contain numerous mitotic figures. Occasionally the lymphoid cells appear to overflow into the interfollicular structures.

According to Kellert (Journal of Med. Research, May, 1920) the hypertropny of the follicles appear to cause distortion of the crypts thus aiding in the retention of the crypt contents.

The selective action of X-rays on embryonic tissue or its effect on the cell

in certain phases of mitrosis are the usual methods of describing X-ray effects on diseased cells as compared with normal cells.

The destructive action of the X-rays on the cells of the enlarged lymph follicles might also be explained on the ground of their having been stimulated to excessive cell proliferation to such an extent that there remains less resistance to the X-ray than the normal cell. Therefore this difference in resistance would account for the small dose of X-ray necessary to destroy the pathogenic lymph follicles without interfering in any way with the normal adjacent cells.

Under skilled supervision there is no danger in application nor is there any dangerous after effects. The tonsils, infratonsillar nodules, adenoids and other lymphatic tissue that is infected and hypertrophied will be benefited. The X-ray does not kill the organism but only allows free drainage.

Conclusions:

"It would seem probable that X-ray treatment will be indicated in cases of diseased tonsils and infra-tonsillar lymph-nodes associated with chronic endocarditis, pericarditis, hemophilia, or any co-existing conditions which contra-indicate operation or anaesthetic.

We know that after tonsilectomy in subjects above the sixth or eighth year and especially in adults there still remains a considerable and possibly a vast amount of diseased lymphoid tissue containing pathogenic bacteria, in which case it would seem reasonable to believe that the X-ray will prove to be of value.

-"It must be understood that this paper is only suggestive and that the permanency of the results time alone will determine. But the facts in so far as the experimental work has been carried out are presented."

Hospitals and Sanatoriums

John Q. Myers, M. D., Department Editor

What is to be done with the small hospitals in North Carolina? Where are the sick and suffering going to seek relief? How are we who care for the sick who need hospital attention in North Carolina going to meet the demands of the twelve hour duty ruling of the Nurses' Association? The forbidding of student nurses doing special duty work either in or out of the hospitals? The keeping of histories and the proper training for nurses, whose professional duty is and will be to care for the sick? These are important questions and need the serious consideration of all the people who are interested in hospital work, and who are interested in caring for those who are physically or mentally unable to care for themselves.

The North Carolina Hospital Association will convene at Pinehurst, N. C., at the Carolina Hotel, April 26, 1921, 9 A. M., when, I trust, a free discussion will be entered into and proper resolutions adopted looking to: First, the interest of the sick. Second, to the maintaining of the hospital. Third, the education of the nurse. Fourth, a standard method of keeping histories of the sick. Fifth, the duty of all of those whose mission is to serve the sick.

I am anxious to have these questions thoroughly studied, and hope that those who are interested will go to Pinehurst on that date and will send a paper or discuss any of the phases mentioned above, and will send me their names and subject of their paper.

The officers of the North Carolina Hospital Association are looking forward to and expecting the coming meeting to be the most interesting one held, and, no doubt, much good will grow out of the meeting for the benefit of all concerned.

NEUROLOGY.

R. F. Leinbach, M.D., Dept. Editor.

Surgery and Brain Tumors.

Many of us who graduated from medical colleges and served our interneships prior to the year 1910 have a vivid recollection of the teachings which we received from neurologists and surgeons alike in regard to the futility of surgical intervention in cases of tumors of the brain. Perhaps even opportunity was afforded once or twice in surgical clinics for us to observe the application of surgical methods to this form of brain disease. If we were sufficiently attentive to grasp the situation, we felt that we were witnessing the final act of

a tragic sequence of events. A patient for whom existence had grown intolerable by reason of steadily increasing intra-cranial pressure and for whom death on the operating table held no terrors; a surgeon with scarce concealed trepidation attempting merely the relief of intra-cranial pressure with all the chances against him. Perhaps a few days later in the same clinic we learned the diagnosis as to the nature and location of the tumor—made at autopsy. Brain surgery then was done by the general surgeon, if indeed it was done at all.

Contrast with this picture the situation today. Neurological surgery is today a specialty in itself. We read today the report of one of the leading brain surgeons of the United States* who has had personal observation of over one thousand cases of brain tumor and who reports 160 operations on 128 patients within the twelve months ending Sept. 1, 1920, rather more than one operation every three days, and with what results! Sixteen fatalities, giving an operative mortality of 10 per cent, a case mortality of 12½ per cent and a mortality of 15½ per cent for the 77 patients for whom a tumor extirpation, partial or complete, was attempted. These results may well be astonishing to those who have not watched closely the progress of neurological surgery.

It is needless to say mortality statistics are not a sufficient gauge of the merits of surgery. The prolongation of life, the amelioration of symptoms, the substitution of lesser evils for greater, are results for which surgery will receive the gratitude of its beneficiaries. The final seal of justification of a surgical operation lies in these things, thus the purposeful transsection of the spinal cord leading to permanent paralysis, but to permanent relief of pain, has been and may be again, a well justified procedure.

What a burden of responsibility these hopeful results in the surgery of the brain and spinal cord impose on the general practitioner and the diagnostician. Early diagnosis is never more important than in intra-cranial tumor cases. Next month, next week, tomorrow perhaps, some patient with a beginning brain tumor may sit in the consultation room of some physician. Let it be hoped that his persistent headache or dizziness or eye complaint may not be passed over as due to intestinal auto intoxication, but that the forethought and good judgment of the physician whom he consults may put him on the road to an early diagnosis and early operation by an expert investigation of his visual fields with the perimeter or other method of accurate diagnosis. Every physician throughout the United States should read the report referred to and think it over with a serious mind.

*Harvey Cushing, Boston: "The Special Field of Neurological Surgery After Another Interval." Archives of Neurology and Psychiatry, December, 1920.

CLINICAL AND PROFESSIONAL NOTES

J. Allison Hodges, M.D.

Epilepsies in Association With Endocrine Dyscrasia.

At this time, it is useless to discuss the question of the etiology of epilepsy, or to argue whether it is a symptom, or a disease; whether certain cases are idiopathic, or essential, while others are reflex, or irritative, or whether, it may be a neurosis, or a lesion of the central nervous system.

In fact, our etiological ignorance is the only justification for our personal problematic classifications.

The purpose of this paper, in view of the diverse clinical views as to the cause of Epilepsy, is to offer some additional evidence to the recent literature, notably McKennan, in which a certain selected group of cases of this disease have been found to be associated with disturbed internal secretions. It is not expected to prove that a consideration of the ductless glands and organotherapy shall furnish an open sesame to the mysteries of Epilepsy, but that there are reasonable prospects in the treatment of some of these conditions from the endocrine standpoint, and some rational and scientific hope of discarding in many of these cases the unscientific method of routinely giving all such sufferers large and continuously increasing doses of bromides.

In doing this, however, the burden of proof is, first, to establish the existence of positive endocrine states in these

cases, and second, to definitely exclude the presence of other possible causes or lesions to account for the symptomatology.

If then, there is in some cases, a rational relation between disturbances in the glands of internal secretion and Epilepsy, may we not be justified in applying this principle in our treatment of such epilepsies, especially when associated with such endocrionpathies?

Several of the ductless glands have been indicted as etiological factors in this disease, but those held principally responsible, are the thyroid and pituitrary, while adrenal and ovarian dysfuctions have appeared in some cases equally culpable.

Eminent authorities might be named in substantiation of these claims, notably Horsely of London, Lichty, Schafer, Harvey Cushing and others, but any experienced neurologist has learned that endocrine disturbances are sufficiently commonly associated with Epilepsy, to warrant using in some cases the special form of organortherapy indicated in the endocrinopathy present. Of course, if the motor excitability in any given endocrine case is extreme, sedatives must be used also, but always only as a part of the glandular treatment.

As to the use of the proper glandular therapy, this logically, of course, depends upon the proved clinical manifestations present of the special endocrine dyscrasia, plus the exclusion of other possible diseases as a cause for the symptomatology.

As being of sufficient clinical importance to be worthy of attention, I submit a brief summary of 31 cases from my records which have been selected, because all of them were submitted to an X-Ray examination, and most of them were subjected, also, to Wasserman reactions, and because in many of them, the symptoms, either present or past, indicated some glandular involvement.

With a negative diagnosis, except as stated and as confirmed by clinical evidences and laboratory examinations, these cases, clinically grouped, were as follows:

Unclassified Manifestations	18
Thyroid Insufficiency	2
Pituitary Dyscrasia	7
Ovarian Complications	2
Adrenal Irritability	2
Total	31

The result of the cranial X-ray findings were:

No demonstrable changes	12
Enlarged pituitary area	3
Small pituitary area	4
Bony changes and deposits	12
Total	31

The number of these positive endocrine cases, as noted, would appear to warrant the conclusion that at least some of the other cases might have had inefficient pituitary glands as etiological factors.

Finally, such cases prove first, that the treatment of Epilepsy in general should not be "routine," but should be based upon a thorough study of all possible exciting causes, and second, that when, in a certain limited percentage of the cases, dysfunction of the glands of internal secretion has been proved, that the proper glandular therapy, long and diligently continued, will frequently secure some quite brilliant results.

Nurses Corner

Edith M. Redwine, R. N., Dept. Editor

"Talk health; that dreary never-ending tale
Of mortal maladies is worn and stale.
You can not charm or interest or please
By harping on that minor chord, disease.

Talk happiness; the world is sad enough
Without your woes. No path is wholly rough;
Look for the places that are smooth and clear,
And speak of those to rest the weary ear."

—Ella Wheeler Wilcox.

The Spirit of Nursing.

Sixty odd years ago, at the outbreak of the Crimean war, there were no women nurses to minister to those who had been wounded in the service of their country. Woman's ministry was sorely needed but not wanted by those in active command of military affairs at the seat of war. It remained for Florence Nightingale to teach the world one of its greatest lessons—a lesson from

which future generations will reap increasing benefits. When the Crimean war closed, the foundation was begun on which the structure of modern nursing was to be reared.

An English writer, Miss Margaret Fox, in an address to nurses, has called attention to the great need of the spirit of vocation in the nurses of today. "Look at it what way you will," she states, "the fact remains that nursing is work demanding more than mere business qualities, more than an active intelligence, more than even sympathy and kindness of heart. The latter precious though it is, may be worn very threadbare in the constant daily contact with all sorts of unlovely natures suffering from a variety of trying ailments. Patients are not all grateful, or appreciative, and you will find some of them by no means ready to kiss your shadow as you pass on your rounds. Sometimes they are inclined to grumble because they do not immediately get all they want. Their disease may make them irritable, captious, even, sometimes, repulsive. These people need more than every day good qualities in a nurse. They need one who, over and above her professional ability, looks upon her work as a vocation, a 'calling of God.' It is that spirit which makes the best of the pioneers of other days what they were. Nursing was undertaken by them as a definite life work. It cost them so much to enter upon it, that they were unlikely to throw it up without some very cogent reason. Work was not then considered so much a means to an end. It was the ultimate achievement. Nursing is a mission; and wherever it is done it needs the same spirit of true vocation to do it well, and to persevere in spite of difficulties."

"There would be fewer restless, discontented nurses, if each possessed the spirit of vocation. It is a spirit that gives one the calm, quiet feeling of being in the only possible place and doing the only possible work. It stirs in one a large-hearted charity towards all such as be sorrowful, sick or poor. It makes one feel, 'Well, whoever fails, I must not.' It helps wonderfully when things are crooked and the work is hard, or uninteresting. One simply can't help making things look nice, or doing the little extra bit which just makes all the difference.

"The motives which influence an individual to undertake a task are tremendously important factors in real and full success, and it is well, in such work as nursing, that all who enter on it analyze carefully their own motives in so doing.

"One of the tendencies of this age in nurses is to expect and apply for positions of responsibility for which they have not taken any special or definite pains to fit themselves. Their estimate of their own ability is often much greater than conditions justify; they often want the best positions without paying the price of special skill. The determination of Florence Nightingale to secure for herself the best instruction the world afforded at that time, and her conviction that if she was ever to accomplish anything worth while she must first learn all that was possible under the circumstances for her to learn about the business of caring for the sick, is a fine example for those who really desire to do worth while things in this world.

It has been well said that ability depends greatly on preparation, and that opportunity is largely dependent on ability. It was by no accident that Florence Nightingale became 'the angel of the Crimea.' Nothing that she could do to fit herself for such a task had been omitted, though she could not know how great were the opportunities that were to be afforded her to use the knowledge and experience she was so determined to secure. She fully realized that to do good required more than good desires or intentions. To do good in the way that she wished required some skill. To be the best possible nurse, to fit herself in the best way, however long it might take, or how hard the way might be, meant much greater difficulties then than it could possibly mean now. When in later years she expressed herself as follows, she was simply expressing the convictions which had been with her all through life:

" 'Nursing is an art, and if it is to be made an art, it requires as hard preparation as is required for any painter's or sculptor's work; for what is having to do with dead canvas or cold marble compared with caring for the living body?' "

(Extracts from "Lessons from the

Life of Florence Nightingale," by Charlotte A. Aikens.)

Some one has aptly remarked: "The doctor plants the little seed of health, but the nurse is the one who makes it grow. The doctor is a sort of consulting engineer, to change the figure, but the nurse is the official who stays right on the job."

Demand for Public Health Nurses Filled.

The Red Cross Bureau of Information, 44 East Twenty-third Street, New York City, stands ready to supply nurses with any information connected with the nursing situation as covered by the Red Cross, and to be the instrument of exchange for communities, business men, industrial operators, individual persons who desire the services of the nursing profession.

If you are a nurse and wish to do institutional work, private duty nursing, go into or prepare for public health nursing, just make your desires known to the Red Cross Bureau. It is a veritable clearing house for nursing activities all over the country; it is a national storehouse of data, any section of which will be generously placed at your disposal. Nurses released from military service have, both in this country and overseas, found assistance and advice readily forthcoming. One hundred and nine of the 247 scholarships granted for training in public health nursing have been to ex-service nurses. If you are interested in public health nursing, why not take advantage of the Red Cross $100,000 appropriation for training nurses to fill this enormous peace-time demand? —Modern Hospital.

Report on Nursing Education.

In October, 1919, under the auspices of the Rockefeller Foundation, a Committee on Nursing Education was organized, under the chairmanship of Prof. C. E. A. Winslow. The committee was asked to study and report on education for public health nursing. Its scope was later extended to include a broader study of nursing education in general, including training for private duty nursing, and institutional and administrative positions. The committee now consists of eighteen persons representing physicians, nurses and lay persons identified with public health work. During the past year two lines of study have been pursued; first, the study of public health nursing, activities carried on by nurses and by persons other than nurses, with a view to judging the caliber of the work, and the training best fitted to prepare for it; and second, the study of the training afforded by hospital training schools, and by graduate courses for public health nursing. In both fields it has of course been necessary to make a representative and intensive rather than a broad study. Typical communities, rural, small town, and city ,have been reported on, and the training schools of representative institutions have been chosen for observation. The final judgment of the committee will be based on an analysis of all the facts, gathered from the various fields of nursing.—Modern Hospital.

In the county schools the Red Cross is putting on the modern health crusade.

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Teacher—"The names of all the little children who did not drink coffee for breakfast, I am going to place on the board, and call it the honor roll."

This little girl who drank coffee became excited and said: "Teacher! Teacher! My name belongs on the board!"

Teacher—"Why, how is that; you said you drank coffee!"

Little girl—"But I threw it up coming to school!"

(This happened in one of the schools of Guilford County.)

Finish each day and be done with it. You have done what you could. Some blunders and absurdities no doubt crept in; forget them as soon as you can. Tomorrow is a new day, begin it well and serenely, and with too high a spirit to be cumbered with your old nonsense. This day is all that is good and fair. It is too dear, with its hopes and invitations, to waste a moment on the yesterdays.—Emerson.

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Lv. High Point, Train No. 12	9:40 P. M.
Lv. Greensboro, Train No. 12	10:35 P. M.
Lv. Danville, Va., Train No. 12	12:40 A. M.
Ar. Norfolk, Va., Train No. 12	9:00 A. M.
NEW TRAIN NO. 5. Lv. Danville	4:10 P. M.
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Southern Medicine and Surgery

Vol. LXXXIII CHARLOTTE, N. C., MARCH, 1921. No. 3

Original Communications

THE RELATION OF PUBLIC HEALTH TO THE MEDICAL PROFESSION OR THE RELATION OF SOCIAL TO CURATIVE MEDICINE.*

W. S. Rankin, M.D., Secretary,
North Carolina State Board of Health.

Until about thirty years ago the medical profession concerned itself almost wholly with cure. The object of cure is the individual. The viewpoint of cure is individualistic. During the last thirty years medicine has concerned itself more and more with prevention. The object of prevention is society. The viewpoint of prevention is social. The chrysalis of individualism that has shut in medicine for twenty-three centuries breaks and social medicine emerges into the sunlight and free air of a larger world.

And so it is that at this time we find the medical profession undergoing an important adjustment. Periods of adjustment in the life of social agency, like similar periods in the life of an individual as, for example, infancy, puberty, adolescence, the climacteric, are the times when inherent weaknesses are most likely to show themselves. As the medical profession undertakes to adjust itself so as to retain unimpaired the profound and individualistic viewpoint of cure and at the same time to acquire the broad social vision of prevention we should accept as natural and unavoidable the slight increase in nervous tension, the accentuation of reflexes, the quicker and more pronounced reaction to impressions, the feeling of uncertainty that is at present quite noticeable in some quarters. Some of the brethren seem to feel that prevention will displace, or replace, cure to a large extent. Just the opposite will happen. Prevention is come not to destroy but to fulfil. Prevention will amplify the opportunities of cure for service and increase its rewards, both material and immaterial. This enlarging influence of social medicine will come about as follows:

First, social medicine will magnify and clarify the public's conception of the meaning of health and disease. To many people the difference between health and disease is largely the difference between the perpendicular and horizontal positions of the body. They recognize as sick the two and one-half millions of American people who are physically incapacitated to the extent of being confined to their beds; they do not recognize the 45,000,000 American people with impairments ranging from mild to serious, with a physical efficiency ranging all the way from "just able to be up and about" to not "quite up to the scratch," that great host that live not in the zone of the abnormal but in its prodrome, the zone of the subnormal. And as to the vast possibilities of health promotion, of making the fit fitter, the great majority of people, including many physicians, have never even dreamed of them.

Prevention gives the people a more accurate and a larger conception of what health means in the achievements of life. This is the effect of public health education which is everywhere regarded as one of the primary and

*Address delivered before the North Carolina Section of American College of Surgeons, Charlotte, N. C., January 20, 1921.

most fundamental duties of social medicine. In this State, for example, we publish a 48,000 edition of a monthly bulletin which goes to any citizen of the State upon request, and it is prepared for the average citizen, not for the technical reader. In addition to this regular monthly publication there is an average daily distribution of 1,600 leaflets and pamphlets on public health subjects to those citizen of the State who write for them. Against diseases of special importance on account of their heavy contributions to morbidity and mortality rates, such as, for example, malaria, venereal diseases, diseases of maternity and infancy, special educational activities are carried on. In a campaign against malaria in Eastern North Carolina recently carried out largely through the assistance of the North Carolina Landowners' Association, 75,000 catechisms on malaria were distributed and extensively used by the public school children. Prizes were offered to the children for the best essays and many children, assisted by their parents, competed for these prizes. During the last year special educational activities have been waged against venereal diseases and 265,000 pieces of educational literature have been requested and distributed to the people of this State. We are at the present time conducting a correspondence course with mothers on pre-natal and infant hygiene which amounts to 6,000 letters annually, and next year will perhaps reach the figure of 10,000 letters. We are advising these mothers as to the hazards of pregnancy and labor and calling their attention to the importance of securing expert advice, of using physicians and not midwives, and of not waiting until labor to call in the physician, but to secure his care and guidance through their pregnancies. We are advising mothers with babies not to wait until the child has an acute illness, but on the slightest indications of diphtheria, or disturbed digestion, or failure to gain in weight, to get in touch with the doctor. This general public health educational work and all these special public health educational campaigns enlarge the opportunities for curative medicine and increase its rewards, material and immaterial. It is those who understand what health means and who are aware of its hazards, the hygienically intelligent, that employ physicians. The ignorant, who neither understand nor value health, make little use of doctors.

Second, social medicine attempts to demonstrate the facility and the freedom from danger of the treatment for certain diseases that are important from a public standpoint in order to popularize their recognition and treatment. There are certain diseases so important in their relation to morbidity and morality rates that the State has undertaken to seek out and introduce the diseased population to those who can afford them relief. While the ultimate object in these demonstration campaigns is purely educational the means employed, in addition to literature and popular addresses used in general educational health campaigns, includes treatments. These demonstration campaigns have been confused in the professional mind with what has been termed State medicine, and which is conceived by certain members of the profession to mean that the State has deliberately adopted a policy of disease treatment which contemplates eventually the treatment of the entire group of diseases involved in the demonstration, and after that other groups of diseases until finally the State has assumed the responsibilities and work of the medical profession. Such a policy would cost this State not less than $10,000,000 a year, a sum that exceeds the entire cost of our State government for all purposes, both maintenance and permanent improvements, by several millions of dollars. The sole purpose and effect of these demonstration campaigns such as we did carry on several years since against hookworm disease, and such as we are now carrying on against bad teeth and diseased tonsils and adenoids, is to focus public attention upon the diseases involved in the demonstration, popularize their treatment, and to start the crowds moving to the office of the dentist and the nose and throat specialist. At present we are treating about 25,000 children a year for defective teeth, about one out of 25 of the existing cases in the public schools. We are treating about 2,000 cases of diseased tonsils and adenoids a year, about one out of 20 of the existing cases in the public schools. These demonstration campaigns will continue until, as in the case of the hookworm campaign, the people generally understand how to recognize these diseases and appreciate the

necessity of having them treated. That done, the State will withdraw the forces engaged in the demonstration and use them elsewhere. Here, again, let me remind you, social medicine in serving the public's interest incidentally enlarges the opportunities for service of the medical profession and increases its rewards.

Third, social medicine to attain its ends must establish public confidence more firmly in scientific medicine and correspondingly divert it from patent medicines, quackery, and pseudo-science. Prevention must make the people generally understand that effective treatment is based upon intelligent diagnosis, and self-medication is largely treatment without diagnosis or treatment based on a guess, which is unwise. The people must be taught that treatment by long disatnce is designed primarily to serve the interests of the seller and not the purchaser of patent medicines. The hardest fight the North Carolina State Board of Health ever made and the only fight in which we were ever completely defeated was the one in the General Assembly of 1917 for the open formula on the so-called patent medicines. I say "so-called" because they are not patent. They do not embody any invention or discovery; they are not patent remedies, but secret remedies, remedies the composition of which is withheld from the consumer. Our attack was designed to make the secret remedy patent, open to the public, by requiring the patent medicine manufacturer to do what the fertilizer manufacturer is now required to do, namely, to print on his package the composition of its contents, so that those who use it may either know or be intelligently advised, and without bias, as to what effect it will have upon them. We met with better, at least partial, success in the last General Assembly, that of 1919, and secured the enactment of a law which prohibits anyone other than a regularly registered physician from treating the 50,000 cases of acute venereal diseases that are contracted annually in this State. Before the passage of this law it is safe to say that most of the cases of these diseases were treated through drug stores with patent and proprietary remedies. Here, again, social medicine serves the public but incidentally it enlarges the opportunities for service of the medical profession and adds to its rewards.

Every doctor should read Oliver Wendell Holmes' "Homeopathy and Kindred Delusions" if he would understand and acquire a philosophic attitude toward the pseudo-scientific healers. What do I mean by pseudo-scientific healers? I mean those whose doctrines of healing find no endorsement, no welcome, no harbor, no chair ,in any recognized university established either by public funds or philanthropy. The pseudo-scientific healer has always existed and he will be here just as long as human nature is what Abraham Lincoln diagnosed it to be when he said you can fool some of the people all the time, all the people some of the time, but not all the people all the time. King's touch as a cure for scrofula once held its millions in mental bondage and numbered among its believers some of the greatest minds in England; weapon ointment followed and had its day; Perkinism came and went; homeopathy is all but gone; osteopathy is on the wane; the chiropractor is in flower. With respect to God's plan for physical salvation, as to His plan for spiritual salvation, the words of Simon Peter are applicable: "But there were false prophets among the people, even as there shall be false teachers among you who privily shall bring in damnable heresies, ... And many shall follow their pernicious ways; by reason of whom the truth shall be evil spoken of. And through covetousness shall they with vain words make merchandise of you."

There is a test, an old, old test, that came from very high authority, by which the public can differentiate the sheep from the goats, scientific medicine from pseudo-science. And here it is: "Wherefore by their fruits ye shall know them." Measure scientific medicine by its fruits, ask it what it has done for humanity. It answers that it has practically destroyed those great army corps of disease so annihilating formerly, smallpox, typhus, and yellow fever; it answers that it met and held at bay, under Gorgas, the forces of disease and death that defeated the indomitable French under de Lesseps in the 80s, and enabled Goethals to make the Atlantic and Pacific one; it answers that it has met that great captain of the hosts of death, tuberculosis, and taken 38 per cent of the territory which he held in 1890; it answers that it has

met and taken 75 per cent of the territory held by typhoid fever in 1890; it answers that it has met and taken 83 per cent of the territory held by diphtheria in 1890; it answers that it has met the forces of disease in general and taken 28 per cent of the territory which they held only thirty years ago; in short, it answers that it has led man and contiues to lead man in assuming, more and ever more, that "dominion over all the earth" to which God commissioned him upon his creation. And now turn and ask pseudo-science, King's touch, weapon ointment, Perkinism, homeopathy, osteopathy, chiropractic, to point out a single disease exterminated, one Panama, a single death rate reduction, and wait for their answer and forever, because they cannot answer.

Fourth, social medicine must make the public understand its dependence upon a properly trained and equipped medical profession. At present the standards of medical education are so high, and very properly so, that the cost of preparing oneself to practice medicine is greater than the cost of training for any other vocation. To graduate in medicine now requires a minimum of six college and university years, an average of eight, a maximum of ten. The average cost of such an education is $5,000, and the average age of graduation is 27½ years. The graduate of medicine today, as a rule, has invested a considerable percentage of his most valuable earning period and, in most cases, all of his inheritance in his equipment for his life's work. The immaterial rewards of medicine are perhaps the most satisfying of all the rewards for service. The pleasure that comes to one from relieving pain, the consciousness that a life has been saved, are satisfactions beyond all value. But these immaterial rewards do not support families and educate children. The medical profession must be adequately remunerated and the public must understand that medical fees are not based upon the time consumed in a visit or in an operation, but upon the relatively large initial outlay in both time and money in preparation for the visit. The income of the average physician is at present not very large. It affords but little more than a comfortable living and leaves but little over for insurance against age and sickness. It is in the interest of the public primarily that social medicine keep carefully in mind that adequate material support of the profession is necessary in order that the ranks may be recruited with the best trained young men which society affords, for in their hands sooner or later the life of each of us must rest.

Another important point in which the public is interested and which social medicine must consider is the difficulty the recent graduate in medicine finds in living up to the idealism which he received in the medical college and in his hospital training. He enters practice with the standards and methods of treatments which he observed in the hospital; he finds that the equipment of the average rural community for first class medical work is inadequate; he cannot make the investigations and diagnoses and apply the treatment that he has become accustomed to. His ideals of practice and the rural conditions that surround him are in conflict. What happens? He moves to the city and our country districts become more and more depleted of physicians. If the movement of physicians from rural sections to cities is to stop and if our country districts are to receive adequate medical attention then the counties, the units of rural government, must establish public hospitals where physicians with good training may have the same advantages for first-class work as cities afford.

We have come to the time in this country and especially in North Carolina when we must give this matter of county public hospitals our serious attention. We claim to be a Christian State. There are in the average North Carolina county fifty churches, about five for each township. Fifty churches per county, and how many hospital beds for the care of the sick? When we recall that final and practical test that is to discriminate between the mere profession of preaching Christianity and its practice, we cannot help but wonder how these counties with their fifty churches and not a single hospital bed for the sick will meet that test, "I was sick and ye visited me."

The next annual meeting of the North Carolina Medical Society will be held at Pinehurst, N. C., April 26-27-28.

The Health Officers' meeting will be April 25.

REST AND MOVEMENT IN TUBERCULOSIS.

By Dr. B. O. Edwards, Asheville, N. C.

The application of the great principles of rest and movement in the treatment of tuberculosis requires a careful study of the individual case for no set of rules can be given that will cover every case. The place of complete rest and of graduated rest and activity in treatment depends on very definite physiological and pathological facts.

Rest.

All patients coming under treatment should be placed on absolute rest until the clinical conditions have been ascertained. Temperature and pulse are the best indications of the amount of rest required. Absolute rest is indicated when the temperature rises above 99.5 F., or if the pulse-rate be constantly over 95. Dr. Lawrason Brown, who is a follower of Trudeau, puts every patient that comes under his care to bed for at least six weeks. I think this a splendid rule and a most wise one, not only for the beneficial effect it exercises on the general condition of the patient, but also for its invaluable assistance in the development of the proper spirit on the part of the patients to lend their cooperation, to bow to the inevitable and fall in the ranks, to make consistent and obedient soldiers, as it were, in their long drawn out fight to regain their health.

Change of Views on Tuberculosis.

A third of a century ago the conception of the treatment of tuberculosis and many other diseases was entirely different from today. Then, the patient whose illness was interpreted as the result of exposure and neglected cold was protected in every way from the air by being kept in closed hot rooms with no fresh air or ventilation at all; now, aerotherapy, or the physiological application of open air in treatment, is one of the widely accepted facts of modern therapeutics. It is happily beginning to be recognized that aerotherapy is serviceable not merely in tuberculosis but also in prevention and treatment of most diseases. Aerotherapy is a preventable measure of incomparable value. My profound conviction is that were the vitalizing properties of open air truly understood and utilized, a large part of disease would cease to be, the day by day life of the community would run on a higher level, and the advance of old age would be hindered. The world has far to go before it realizes practically the tremendous significance of this mighty principle. For our purposes today it suffices to recall that the majority of physicians have adopted more or less fully the principles of aerotherapy in the treatment of tuberculosis and many other diseases.

The question now before us is, granted that the patient is to be treated on open air principles, what then? Is he to be kept at rest, or is he to be allowed movement, and if so, in what form and to what extent? Most of the older school of doctors, and the school is far from extinct, favored a complete rest for the consumptive patient. It was argued that to heal a congested and perhaps ulcerated lung, rest was essential, and I think that they were right to a great extent. It seems an almost elementary proposition that the less movement the better for the patient. The example given was, if you have a broken leg and keep it wiggling it will not heal. Movement would presumably injure the lung both directly and indirectly through excitement of the circulation and nervous system. One of the older men says: "A lung that is tuberculous should be exercised as little as possible. It should be kept as still as may be to the end that its recovery may be hastened." So in a good many places still the majority of consumptive patients are left for prolonged periods at almost constant rest.

We shall see that while rest is helpful and indeed essential at certain times, the prolonged continuance of rest treatment is fraught with unsatisfactory results. The patient may seem in many instances to improve, perhaps he puts on weight in large amounts, often he becomes heavy and corpulent; but it is commonly mere fat. The tissues remain soft and flabby and the individual himself is far from physiologically fit. The practice of continued and prolonged rest in consumption proceeded from a faulty and insufficient conception of the disease. The attention of the physician was directed chiefly to the local lung

*Read before meeting of Tri-State Medical Society, Spartanburg, S. C., Feb. 16-17, 1921.

lesion. The conception had hardly dawned—even yet it is insufficiently realized that the lung lesion is a relatively small part of the illness—the gradual descent downward, pathetically described in popular language as "decline" or "consumption," is not an expression of lung disease as such but rather of a systemic or constitutional intoxication. What are the earliest symptoms which the patient manifests? They are not, as is usually supposed, referable to the lung. The disease is far on when the patient begins to cough and expectorate. Long before the local symptoms show themselves the patient, although he may not understand it or still less complain of it, has experienced a sense of tiredness, languor, disability for mental and bodily effort, enfeeblement of circulation and gastro-intestinal disablement, loss of appetite, dyspepsia, constipation, etc. The occurrence of such symptoms must not be passed over lightly, contrariwise, the practitioner of experience watches for the first appearances. They are to be interpreted not vaguely as evidence of overwork, but as evidence of the systemic and more particularly muscular poisoning. This process of muscular poisoning recalls itself visibly and palpably in the progressive wasting of the muscles both of trunk and extremities, their advancing flacidity and the increase of what is termed myotatic irritability. It is a muscular dystrophy dependent on intoxication.

Indications for Alternating Rest and Movement.

Returning to the question of rest and movement, how are we to apply the principle to the varying manifestations of the disease which occur? So long as the tuberculous process is in active operation toxins are elaborated readily and passed freely to the muscles with resultant progressive dystrophy. This dystrophy affects not only the muscles of the trunk and extremities where it is so evident, but affects likewise the heart muscles, the muscles of the vessels and the muscles of the other viscera. At this stage the indication for treatment is mainly rest. Rest has the double advantage of tending to stay the active local lesion and the dissemination of toxins and of limiting the output of energy by the dystrophic muscles. On the other hand, when the tuberculosis is less active or in the process of arrest and the production and carriage of toxins is correspondingly less abundant and rapid, the dystrophic muscles tend to recover themselves physiologically. Nothing repairs muscular tissue so certainly as natural movement and this should be the guide for regular activity. We have noticed that tuberculosis tends to occur more frequently in persons who lead a sedentary or at least a relatively inactive life. It is freely admitted that nothing so certainly checks the earliest threatenings of tuberculous disease in a child, whether in the glands, lungs or elsewhere, as turning him out in the country and letting him lead a natural active life in the open air.

It is a different matter when the tuberculous process is further advanced and lung destruction is in progress. Here we are face to face with morbid conditions, both local and general, which are best met by rest. Take for example the occurrence, say the repeated recurrence of bleeding from a cavity within the lung. It goes without saying that here rest, both mental and physical, should be enjoined. Again where the lung is breaking down rapidly and there is continuous absorption of poisonous products with corresponding systemic intoxication, evidenced by disturbance of temperature, increased pulse-rate and rapid wasting, rest must be the order of the day. The excessive waste must be met by economy in wear and tear. The circulation, which is the chief channel of dissemination of the poisons, must be kept as quiet as possible. As acute manifestations disappear under the influence of rest and the risk of local and constitutional disturbance is reduced, the need for complete rest is lessened or removed. As recovery proceeds further the aim comes to be the restoration to the physiological both locally, so far as the respiratory function of the lung is concerned, and generally, so far as the circulation and musculature are concerned. By the institution of natural movement the physiological cure or recreation is assisted and there follows a gradual return toward the normal condition of health in every organ. I need hardly remind you that for us all health is largely governed by the harmonious alternation of activity and rest.

Regulation of Dosage.

The amount of activity allowed must in every case be guided by the needs of

the individual patient. Activity in excess may serve to aggravate the local process. The lung trouble may once more take on an active character. The possible occurrence of these untoward effects implies the need for most careful supervision of persons undergoing treatment by movement. Sir Robert Philip, who originated and put into effect the well known Edinburgh scheme of handling tuberculosis, states: "Indications for the reduction of activity will be found in increased rapidity of pulse-rate and irregular oscillation of temperature just above the normal line. Indications for complete cessation of active movement and return to a more or less complete rest are afforded by an elevation of temperature over 99 degrees F., a continued pulse-rate over 95 per minute with corresponding diminution of blood pressure, recurrent headache especially at the end of the day, and undue sense of fatigue."

Scheme of Physical Treatment, or Edinburgh Plan.

I will give you a brief outline of the physical treatment as given at the Royal Victoria Hospital for Consumption, located at Edinburgh and under the supervision of Sir Robert Philip. It is arranged in graduated stages. On admission each patient is placed at complete rest. In addition to a minute examination of every organ the patient's general condition is carefully observed and according to the estimate which is made the length of the resting period is fixed. Thereafter, in the absence of contra-indication the patient is gradually advanced through the other stages according to his physical condition. The nature and amount of activity are definitely prescribed just like drug treatment, the dose being increased or diminished as the temperature chart, pulse-rate and other indications suggest. A colored badge is given to the patient to denote the states reached.

1st—Resting Stage (White Badge).

On admission to the hospital all patients are prescribed complete rest lasting from a few days to several weeks, according to the individual patient.

2nd—Stage of Regulated Exercise (Yellow Badge).

A. Walking varying distances from one-half to five miles—

(1) On the level.

(2) On sloping ground.

B. Various respiratory exercises once or twice a day.

C. Other forms of movement to improve carriage of shoulders, head, chest, etc.

3rd—Stage of Regulated Work (Pale Blue, Green, Deep Blue and Red Badges).

The work is chosen with a view to utility and with due regard to the patient's individual case and to his past trade. This stage is sub-divided into four grades—A, B, C, and D.

Grade A—(Pale Blue Badge):

Picking up papers, leaves and other light rubbish on the grounds.

Knitting, sewing and drawing.

Grade B—(Green Badge):

Emptying garden waste boxes and assisting to carry away rubbish.

Carrying light baskets for various gardening purposes.

Light painting work (grates, fences, furniture, etc.)

Wiping shelters.

Setting tables and laying cloth in patients' dining room.

Cleaning silver.

Cleaning brasses, towel rails and taps.

Grade C—(Deep Blue Badge):

Raking, hoeing, mowing and sweeping leaves.

Drawing two-wheeled barrows with assistance.

Other gardening jobs requiring a similar amount of exertion.

Heavier painting work.

Sweeping shelters and scrubbing floors.

Cleaning boots and cleaning knives.

Assisting in laundry (folding clothes, etc.)

Washing and drying dishes.

Grade D—(Red Badge):

Digging and sawing.

Carrying baskets for various gardening purposes.

Wheeling and drawing full wheelbarrows and other heavy gardening work.

Drawing bath chair.

Bathing other patients.

Mangling and window cleaning.

Polishing floors and sweeping and cleaning courtyard.

Carpentering and joinering.

Attending boiler and engineering.

The results at the Royal Victoria Hospital are very satisfactory. The hospital is one of the best arranged institutions in Europe, although not so elaborate or expensive as some in Swit-

zerland. It is arranged so that each bed is located at a window in order to give the patient both fresh air and sunshine. For the ambulant patients who are allowed to be up and outside, they have shelters that allow them to sit in the sun and yet be protected from the strong winds. The progressive improvement in the majority of the patients is very striking. Physically, the results are registered from day to day in satisfactory fashion. These include a progressive sense of well being, keenness to live and work, a healthy appetite and digestion, return of fresh color to the face and skin. Gain in weight is dependent not on fatty overloading but on increase of muscular tissue. Taking the collective body of patients found in this hospital undergoing this system of treatment, we found a fine procession of persons, some just emerging from serious sickness and others at varying stages of advance toward perfect recovery. Their records showed symptoms something like this on admission: "weakness," "hectic flush," "quite unfit for work," "very thin and delicate," "quite done up," "very great weakness," "worn out appearance," "easily tired on exertion," "thoroughly run down with corresponding involvement of lung." After having been treated for some months we found their records running similar to this: "Symptoms have almost entirely disappeared," feels splendid," "looks very fit," "general and local symptoms have entirely passed away," "able to do a full day's hard work," "enjoying very hard work which he has never been able to do before with no feeling of tiredness," "never felt better in his life with corresponding improvement in the local conditions within the lung.

They, of course, have their disappointments—we all do. At times the course of illness is so acute that no help is of avail, at other times treatment for one cause or another has been delayed too long. Sometimes the resisting power of the patient is unduly low. But, given patients of ordinary resisting power in whom the disease has made slight inroad or at most only moderate advance, there is good expectation that, under sufficiently prolonged treatment by aerotherapy, rest, carefully graded activity and appropriate medical treatment, their return to health will be achieved. And, in not a few instances the physiological value of the procedure is such as to place the individual on a higher plain of health than ever reached hitherto.

THE TREATMENT OF MALIGNANT DISEASES BY RADIATIONS.

By Drs. D. W. and Ernest S. Bulluck and R. H. Davis,
Wilmington, N. C.

The treatment of neoplasms by the rays of roentgen, or by those emanating from radium, has developed so rapidly within the last few years that those not particularly interested may have failed to realize the increasing effectiveness of such agents.

When the source of radiation is an X-ray tube, the rays are classified as soft, those that penetrate little more than the skin, and hard, those that penetrate tissues of any thickness. When the radiation is from radium three types of rays are emitted. Of these the Alpha and Beta rays consist of a stream of physical particles. The Gamma ray differs from the other two in that it contains no electrically charged particles. This ray is a vibration or form of motion. It is identical, so far as is known, with the hard ray emitted from an X-ray tube. The Gamma rays from radium and the X-rays from a Crook's tube have the same wave length, the same effect upon a photographic plate and the same effect upon animal tissue. With a given effect no one can tell the source from which it came. The soft Alpha or Beta rays differ in physical characteristics from the X-rays, and some workers are impressed that by reason of this they are more effective. This superiority is denied by many, it being maintained that the same result can be produced by X-rays. The action of the Alpha and Beta rays is limtied to superficial lesions, where radiations from whatever source produce the most brilliant results. The Gamma rays and the "unknown" rays of roentgen are identical in action and differ only as to their origin. There are certain limitations to the use of radium. The combination of the three different rays is by no means advantageous. The hard Gamma rays are not applicable to lesions of greater depth than five inches. To destroy a growth in the mediastinum

at a depth of five inches would require an exposure by Gamma rays of duration long enough for the Alpha and Beta rays to have burned the skin thirty-five times. In practice this is prevented by the use of filters. This, however, lessens the penetrability of the Gamma rays. With roentgen rays the softer rays may be filtered out, there still remaining enough "hard" rays, similar to the Gamma, to "cross fire" at a lesion through all the enveloping surfaces of the body. As to quantity, a Coolidge tube will emit more such rays in eight seconds than all of the possessed radium of the world could in perhaps an hour. Why then is radium used? Because it is hoped that new and unknown effects may be discovered. It is believed by some workers that the clinical results on superficial lesions are slightly better. The substance lends itself to application in certain regions, such as sinuses of the head, uterine cervix, and in certain growths where the radium may be buried within the neoplasm. This always with the idea of treating the immediately surrounding tissues. We know of no writer using radium who does not treat all deep lesions with X-rays in addition, the radium activity being too limited to affect the surrounding tissues, lymph channels and nodes. It seems that if some new and superior therapeutic effect is not found for radium that it will be discarded in favor of the more abundant and better controlled X-rays. The high tension transformer and Coolidge tube form the most practical source of radiations. From these the only ray well suited to the treatment of deep lesions is obtained. In applying such rays the following, while dogmatic, represents the sum total of the best thought of the day. The tube is placed ten inches from the skin. A current of sufficient strength to jump across nine inches of air is applied to the terminals of an X-ray tube. The vacuum of the tube being high enough to allow only five millimperes to pass through. If such an exposure be continued, using an aluminum filter, one millimeter in thickness, for fourteen and one-half minutes, redness and desquamation will appear on the exposed skin. This is known as the "erythema dose." Less will not produce the full effect and more will cause a burn.

The physiologic effect of the ray is to lessen pain and kill tissue. A lethal dose will cause degeneration of the cells, the area becomes vascularized, there is leucocytic infilteration followed by absorption and disappearance of the affected cells. The more proliferative its cells, the more susceptible is a tissue to the effect of these rays, the submaxillary gland and the testis being particularly susceptible. This effect extends to malignant tisues as they are rapid, poorly nourished, misdirected growths. For instance, the skin has about twice the resistance to the rays as is offered by a Carcinoma. The object of the treatment is to destroy the less resistant cancer cells without unduly affecting the normal tissues. By experiment, it has been found that in the rat it requires six erythema doses to kill the cells of Sarcoma, twenty per cent more for those of Carcinoma, and much less for lympho-sarcoma or epithelioma.

There seems to be some apprehension that the rays may have the effect of stimulation to activity a previously slow or dormant growth. While mild doses are stimulating, in practice this never occurs. Others are apprehensive lest partially destroyed cells might lose their mooring, float to other tissues where they may recover and grow. This is ever possible with even untreated neoplasms. We have, however, never seen or read of a case where the evidence was strongly presumptive that such an accident had occurred as a result of treatment.

Certain people manifest a marked immunity to malignant growths. This resistance may be natural or it may be acquired after the growth has developed. Undoubted, spontaneous recoveries are reported. Cases are found where cell nests have become active, progressed for a period, then undergone degeneration at the mass center, followed by cessation of the growth and its envelopment by connective tissue. After treatment for long periods where the growth has not been destroyed, the cancer cells may develop an immunity to the X-rays, the patient with such a growth having previously responded to treatment suddenly loses her apparent resistance, new areas promptly appear and the original growth may increase in size. The effect of the rays on such tissues is diminished. By increasing the exposure these recurrences may again be brought under control. This has led to the use of

massive doses, the object being to completely destroy the cells before they can acquire an immunity to the rays. These exposures are sufficiently long to cause ulceration of the skin and sloughing out of the growth. There are, however, certain practical difficulties, the absorption of large quantities of devitalized tissue might lead to the death of a cachectic person. The resulting cavities are healed with great difficulty. The legal possibilities are limitless.

Just how much assistance may we expect in the control of malignancy from these radiations? This will depend upon the type of disease, its location, stage of growth and the resistance of the patient. They are not to be considered as a substitute for surgery, but are a very valuable aid. By destroying microscopic elements that evade removal or irremovable parts slightly involved, they may cause complete recovery to follow an incomplete extirpation. Recently considerable attention has been given to the advisability of applying the rays before operation, thereby lessening the chance of metastisis resulting from the trauma of the procedure. By way of illustration, in carcinoma of the breast, it has been demonstrated that aside from growth by infiltration into the interstices of the surroundingg tissue, there is another type of extension by penetration. This consists in a "streptococcic like" growth of cancer cells through the lumen of capillaries. It has been shown microscopically that in a moderate sized unattached lump in the breast that this penetration has progressed throughout an area of about twelve inches in diameter. As it is impossible to remove every such cell, we are forced to conclude that the reason we do not always have recurrences is that the resistance incited by the primary growth is sufficient to control the remaining cells. Those not possessing this resistance make up a large part of the mortality. Pre-operative exposure devitalizes such stray cells as may be swept into the blood stream and subsequent exposure completely destroys such tissue as may have escaped removal. Exposures should be made one week before operation and once a month thereafter for from six to twelve months, depending upon the apparent necessities of the case. The use of the above routine will materially lower the number of recurrences.

In cancerous conditions of the skin, we may expect the rays to produce a complete cure and that with certainty. We rather doubt that one is justified in surgically removing an epithelioma about the nose, lips or the eyes. These gowths can be permanently removed by the rays with complete absence of hard scars or contractures at these locations.

The treatment of the group of cases that include recurrences, metastisis and deep lesions affecting parts not amenable to surgery, offers no certain result. All of these cases are materially benefited for the first year of treatment. The relief from pain is very marked, sufficient in itself to justify the treatment. The general health is improved and the tumor decreases in size. After about a year recovery is complete or the cancer cells have developed some immunity to the rays. The tumor may then enlarge and new growths appear. These cases usually fail to recover, but they may be kept alive and comfortable for from two to five years. Out of a group of such cases some will completely recover and these recoveries may occur in patients who had seemed to be moribund. A "sample" case history is here appended. The literature abounds with similar ones, many offering no possibility for an error in diagnosis:

Mrs. F. H., forty-one years old, weight ninety pounds, four years ago noted lump in right breast. In July, 1915, she consulted a doctor, who found trouble in both breasts; later she visited the Mayo clinic, where it was found that she had a cancer of the uterus, liver and both breasts. She was referred for Roentgen therapy, coming December, 1915.

Results: She has had eighty-seven treatments, covering the entire torso, from chin to pubes, front, back and both sides. When she came she was bedfast and unable to eat or sleep because of the pain. Her pain disappeared, her uterine hemorrhage ceased, she gained weight, was able to sleep and eat anything she liked. She has been doing her own housework for more than three years. Both breasts are soft and the liver is barely palpable, while the uterus is freely movable and normal in size. (Case 6626—Report of four cases of malignant disease, American Journal of Roentgenology, May, 1920.)

While much may still be desired, we must conclude that in the roentgen ray

we have an agent of very great value. The number of neoplastic diseases receiving treatment in our cities is so very small as to lead us to believe that the possibilities of this treatment have not been fully apprecaited. The treatment of these conditions is, at best, unsatisfactory, and our failures so numerous that it seems that patients are entitled to have explained to them the possibilities of X-ray treatment, and the privilege of personally refusing this aid. It is only then that we can feel that they have been given every opportunity to make a recovery.

SOME THINGS WE LEARNED ABOUT MENTAL DEFICIENCY DURING THE WAR.

C. Banks McNairy, M. D., Superintendent, Caswell Training School, Kinston, N. C.

In presenting you a few of the facts as I have been able to gather them upon the subject of this paper, I have depended largely upon the statistics printed by Dr. Pearce Bailey of the New York State Commission of Mental Defectives, and Chief of Section of Neurology and Psychiatry in the Surgeon General's office in Washington, and Roy Haber, Statistician in the Section of Neurology and Psychiatry in the same office, in an article published in Mental Hygiene in July, 1920; and also a paper read by Dr. Thomas H. Haynes, Field Consultant of the National Committee for Mental Hygiene, in New Orleans in April before the National Committee of Social Welfare, published in Mental Hygiene in October, 1920.

There were diagnosed as mental and nervous disorders 72,223 cases in the examination of recruits for the American Expeditionary Forces; 22,741, or 31¼ per cent, were mentally defective to such an extent that prevented their being fitted for any kind of military service. This was something like one-third of all the mental and nervous cases recognized and far more numerous than any other clinical group. This did not include the mental defectives rejected by the local boards, which when added brings the total to 26,545 individuals seriously handicapped by mental defects. It must be admitted, while 26,545 represents the bulk of mental defectives called to the colors, it does not include the 1,475 found at the Base Hospital No. 214, A. E. F., and returned, nor those found at the demobilization examinations.

Others were discharged under a different diagnosis than mental defects; some disposed of directly by the courts; others discharged as unfit; numerous other border-line cases were accepted and not a few high-grade defectives became part of the order and served in a low strata of usefulness throughout the war.

If the number of men examined was 3,500,000, the ratio of defectives per thousand would be 6.5. Then we registered 10,101,506 men between the ages of 21 and 31 years, giving 65,650 mental defectives of the given age period.

It appears from these statistics that the number is surprisingly large, showing mental deficiency to be by far the most frequent of all conditions with which psychiatrists have to deal.

The same statistics state that mental defect is approximately 3 times more frequent than drug inebriety; 30 times more frequent than disabling alcoholism; 3 times more frequent than insanity.

In one state hospital in Mississippi, Dr. Haynes found 30 feeble-minded persons. In two orphanages in the same state, with a population of 270, he found 30 children that were feeble-minded. In the Mississippi Industrial Training School, with a population of 128, he found 2 girls and 8 boys who were defectives; also, other border-line cases. In a New Orleans Home, in a population of 164, he found 13 cases of feeble-mindedness and 4 border-line cases.

Over 20 per cent of these boys are so affected there is no reasonable chance for them to go straight.

In one white school out of 1,555 children in attendance, he found 15 who were feeble-minded. In three county jails of Mississippi, population of 255 at the time visited, he found 23 feeble-minded persons. He visited 38 county homes, population of 285; 141 were feeble minded—one-third of the total number. In the State Penitentiary of Mississippi, out of 103 persons, after a thorough examination, he says he found 19 of these men to be feeble-minded,

*(Read before the Onslow Medical Society meeting at Jacksonville, N. C., Jan. 20, 1921.)

their mental ages ranging from 5.2 to 9.5 years, and a number of border-line cases. Twenty per cent of the inmates of the penitentiary were feeble-minded to that extent that reformatory treatment offers no hope. He also examined 600 negro convicts; 40 per cent of them were feeble-minded.

Dr. W. D. Portlow and Dr. Haynes found 129 mental defectives in four Alabama industrial schools, population of 654—about 20 per cent.

"Feeble-minded are found in county and parish jails whenever any considerable number of such populations are surveyed."

The same is true when the same tests are applied to schools and other custodial institutions of our State. We have on file in our office to date over 1,300 requests from 34 counties, leaving 66 counties yet to be heard from.

Gentlemen, it is not my purpose to worry you with statistics. My object is only to try to give you some reliable data that might impress upon you, to some extent, the enormity of mental deficiency and the part it plays in our present social and economic problems. I hope by such consideration to stimulate you to action. I trust we men of the medical profession assume the responsibility of enlightening the young as to its cause and prevention especially, as well as to its prevalence. I further hope by a careful study of these facts and the conclusions that I have drawn that you may see the necessity for and enter whole-heartedly into the efforts now being made to have a state psychiatrist with an office and equipment commensurate with the duties required.

I want you to help impress upon the public this fact: that the rock-bottom basis of all social and economic betterment is the correct recognition and solution of the problem of the feeble-minded. This alone offers the only hope of any permanent or lasting progress of our social or economic problems. All other efforts are simply trying to find the end of a ring; always having the same to do and never approaching any nearer the end. Nowhere are help and direction needed more than by the State's judiciary department. Every court should have in its machinery the service of a special psychiatrist to whom might be referred all cases in which there is doubt in regard to mentality and responsibility. Their methods, paraphernalia and endeavors to correct crimes committed against society by fines, imprisonment and punishment, we honestly believe, have long since been recognized as far from a success, and the most radical must confess that justice has oft-times gone astray and the mentally irresponsible have been held responsible. We think it just as essential that the judge and the court have as their assistant the psychiatrist as that the defendant have his attorney.

Mental deficiency handicaps our systems of education and economic development by its throngs of unfortunates. No state has as yet considered it with foresight and intelligence as the situation demands. The truth, we believe, has been fully emphasized and the needs for the same have been demonstrated as the statistics above quoted show.

If the Military Commanding Officer needs a neurologist and psychiatrist in order to see that his discipline and training reaches its highest mark of efficiency, and further that no injustice be done to the unfortunate and incapacitated soldier, then why not our State give the same help and assistance to our judges, courts and jurors? I think a careful study will convince anyone that we have learned in our program for the future for mental defectives that it is not to be eliminated from our social or economic life. They must be trained and prepared as their mentality will permit to occupy the less important positions and not be charged with special duties or extraordinary tasks.

These unfortunates, the high grades, should not be segregated, but properly adjusted as to mentality and responsibility, and put in positions where too much is not expected. Society should be informed as to their weaknesses and responsibility and treat and use them accordingly to the end that they may not become an embarrassment or burden either to themselves or to others.

In every organization, military, manufacturing, social, or otherwise there are of a necessity, always has been,—and I am pessimistic enough to believe always will be—those who will be designated, and must be for the upkeep of the same, hewers of wood and drawers of water.

Were our citizenship and officials as alert and responsive to the recognition

of mental sickness and mental defects as they are to recognizing the unsound and destructive processes of business, I honestly believe that many homes that are now fatherless and without a bread-winner would be happy, and many women who now adorn themselves in the garb of black would be wearing smiles of joy, and the State would be just as wealthy and safe financially.

If every bank examiner were accompanied by an expert psychiatrist who was permitted to have the same access to examine into the banker's mental condition that the examiner does to his modus operandi, then many a life, yea, soul, might be saved—not speaking of the anguish and years of conflict, sorrow and disappointment that are to follow the widow and orphans. The bank with all of its assets, as well as the life of the banker, could be thus preserved.

Should the courts be permitted to have their psychiatrists, as we have suggested, then many a judge and juror would find other methods or means of correcting the crimes committed against society than that of the penitentiary and the electric chair.

HEMOPTYSIS, AS THE INITIAL SYMPTOM IN EARLY PULMONARY TUBERCULOSIS.

By R. C. Long, M.D., Asheville, N. C.

There is, perhaps, no other symptom which carries with it the importance, and calls for as thorough and painstaking examination and study, as that of hemoptysis; when we take into account, not only its frequency, occurring as the initial symptom in incipient phthisis, but also the frequency in which this symptom is the first to attract the attention of the patient sufficiently to lead to an investigation, whereupon an examination reveals the presence of pronounced constitutional symptoms, and a definite and oft-times extensive tuberculous involvement.

As to the frequency of hemoptysis ocurring as the initial or first recognizable symptom, statistics vary greatly, as reported by different writers—the figures ranging from ten to twenty-five per cent. This wide variance in the percentage can be explained, and is no doubt due to the fallacy of the statement given by the patients, relative to the time, and occurrence of the blood-spitting.

Sorgo, from the study of some five thousand cases, reports only 12.9 per cent where the hemoptysis was satisfactorily proven to be the first recognizable symptom.

Kuthy, from his records, found 22.3 per cent, while Anders reports approximately 25 per cent, which is probably the highest on record.

It is difficult to arrive at anything like an accurate percentage of the cases, where the hemoptysis was really the first recognizable symptom, due to the fact that in history taking, a large per cent patients will tell you the hemorrhage was the first symptom and warning they had of their illness; that they had felt perfectly well up to that time; but upon questioning a member of their family, quite frequently you will be told that they had noticed the patient coughing, losing weight, or probably other noticeable signs of a deviation from the normal, extending over a period of weeks or months, and upon making a physical exploration of the chest, find moderately advanced lesions in many of them. In these cases, the hemoptysis could not be regarded and classed as the initial symptom.

On the other hand, we have hemoptysis occurring in the so-called abortive type of tuberculosis; patients who, without warning and premonitory symptoms, expectorate blood, and upon consulting a physician are found to be without suggestive symptoms, and apparently normal; but after a few days, develop a cough, malaise, night-sweats and a mild pyrexia. They regard these symptoms as of minor importance, or probably that of a cold, and after the usual treatment, a rest in bed, or a cessation from their work for a few days or weeks, the symptoms subside, and they pursue their vocation and usual routine of living and remain well indefinitely; and, in a certain per cent of cases, the hemoptysis is not followed by demonstrable symptoms whatsoever; but later, due to unfavorable living conditions, overwork, mental anxiety, depression or other causes, a lowered resistance and retrogression is brought about, followed by the development of new tubercles, and by and by they notice a decline in health, the manifesta-

tion of certain symptoms, which arouse their suspicion and lead them to seek medical advice, and are found with pronounced constitutional symptoms and active tubercular involvment, and oft-times evidence of fibrosis—the result of the primary activity.

These initial hemoptyses are seldom mentioned when the patients are questioned relative to any previous illness, or as to the onset of their present trouble; hence, it is obvious, were it possible to obtain a true and accurate history in these cases, the percentage of initial hemoptyses would be far greater than statistics now show, and would probably be not less than 40 per cent; while in all cases hemoptysis, were it possible to determine the causes beyond a doubt, 80 per cent would very probably be found tubercular in origin, the infection either existing alone or combined with a non-tuberculous lesion.

There are many things, as we know, capable of causing hemoptysis, other than tuberculosis; indeed it may be a symptom of any disease, infection or injury of the upper respiratory tract, cardiac lesions, mediastinal tumors and many others, too well known to all of us to call for special mention here, but in most instances, if we go far enough in our examinations, the careful use of the stethescope, tests and diagnostic methods, we are able to prove or exclude these extra-pulmonary causes, while it is more difficult to recognize the many intra-pulmonary lesions which cause bleeding, and when found, differentiate between a tuberculous and non-tuberculous condition. In many cases, it is most perplexing, and even impossible to ascertain where the blood is coming from. What appears to be a weakness and common error on our part, is the tendency to lose sight of the fact that incipient phthisis can and does cause hemorrhage before the development of classical symptoms and physical signs sufficient to furnish a suggestive clinical picture; and not until forced by this clinical evidence are we willing to accuse and put on trial the tubercle bacillus as being responsible for the blood-spitting. Hence, it is imperative that we understand the causes and anatomical changes which bring about this bleeding in early phthisis to be able to appreciate its full diagnostic significance.

We know that many of the initial hemorrhages come from a mere localized, active hyperaemia, caused by the irritation of the tubercle bacillus on the lung tissue; but we understand that bleeding from this source is necessarily scant, coming by diapedesis, and probably in some cases, appears only as a blood-streaked sputa, and of the same character as bleeding from a congestion of the mucous membrane in the upper respiratory tract, or elsewhere. It may be caused by the implantation of the tubercle bacillus directly on the wall of a blood vessel, resulting in erosion and rupture. Also, we may have hemorrhage occurring at this early period from a congestion of the mucous membrane, caused by the irritation of an underlying granuloma.

When the granuloma fails to perform its function—which is to destroy and control the infective agent—it undergoes anatomical changes and becomes malignant, so to speak, and a destructive action is set to work, with an increased amount of granulation tissue, at the expense of the lung parenchyma, and as it increases in size, the blood supply becomes inadequate, causing a rupture of the granuloma and the eroded capillary blood vessels supplying it, which accounts for the more or less profuse hemorrhages met with.

Furthermore, a ruptured granuloma may undergo the process of caseation to cavity formation, the blood vessels withstanding the invasion of the infection, and structural changes, and left unsupported, traversing the cavity, resulting in aneurysmal dilation; when, during high intra-pulmonary pressure from cough or strain, rupture occurs, causing a copious hemorrhage; yet the local and constitutional symptoms may be too obscure for recognition.

Another cause, and a very common one, is the action of a mild secondary infection, following the rupture of a granuloma, causing a pneumonic consolidation and a blood-streaked or hemorrhagic sputa, the same as seen in pneumonia.

This secondary infection which supervenes on the primary lesion, or granuloma, has its own group of symptoms, the chief one hemorrhage—and oft-times it is impossible to demonstrate the pyogenic organisms, and does not give rise to pronounced constitutional symptoms to cause the suspicion of tu-

berculosis sufficiently to lead to an examination; and when we consider the low toxicity of the tubercle bacillus, it is not difficult to understand the frequency of these initial hemoptyses in phthisis, when not supported by recognizable clinical evidence. For illustration, I cite the following cases:

1. Miss M. G., age 20, well nourished and apparently in the best of health; having had no signs noticeable to herself or family that would indicate the slightest deviation from the normal; while attending a dance, felt something rise in her throat, and going out on the veranda, spat a mouthful of blood. She was allowed to continue with the dance, but on the following day, a physician was called, and after making an examination, he declared her to be without symptoms of disease, and stated that the hemorrhage was due to an abrasion of the mucous membrane somewhere in the upper respiratory tract. Three months from that date, it was noticed the patient had developed a cough, she did not feel so well and was losing weight. Five weeks later she consulted another physician, who made a thorough and complete examination, which revealed a moderately advanced tubercular involvment, with beginning cavity formation. Death was the result.

2. J. E. H., male, age 22, cigar maker, spat some blood and soon thereafter noticed a decline in health. He consulted a physician, giving a history of hemorrhage, loss of energy, weight, appetite and at intervals, chills, or chilly sensation. His skin was of a sallow, waxy appearance; had a hacking cough and mild pyrexia.

Diagnosis of chronic malaria was made, hemorrhage attributed to anaemia, and was treated accordingly for five months, with a gradual increase of all symptoms. Upon consulting another physician, examination revealed extensive tubercular involmement in both lungs. Time soon proved the hopelessness of the case, and death closed the scene two months later.

Diagnostic Significance.

The statement made by one authority on tuberculosis—and which appears to be a truthful one—is that the proportion of diagnostic errors are greater, in the attempt, or not attempting to recognize incipient phthisis, than in any other disease, and is largely contributed to by our failure to place sufficient importance and diagnostic significance on hemoptysis, when it occurs unaccompanied by other recognizable symptoms.

In the mind of some writers who have expressed their opinion on this subject, it leaves a wide margin for error to consider all hemoptysis as tuberculous until proven otherwise.

One author says: "It is not justifiable to make a diagnosis of tuberculosis and start the patient on a long course of treatment, who comes to you with a history of having had one or more hemorrhages and presenting mild symptoms of cough with some expectoration, fever, malaise and wasting, with slight signs of fibrosis in the lung; in the absence of tubercle bacilli in the sputum, after repeated examinations, unless this clinical evidence can be corroborated by radiography beyond a doubt; it is possible the lesion could be a non-tuberculous fibrosis, a bronchiectasis, streptothrix infection or a syphilitic gumma."

It would seem most unwise to make this a hard and fast rule, and attempt to adhere thereto; while I appreciate the fact, the radiograph is very necessary, and an invaluable adjunct to the diagnostician; yet we must admit that it is not infallible, and there are cases of incipient phthisis met with presenting a similar clinical picture, just described, in which nothing definite is found with the radiograph. Furthermore, in cases where the radiogram does indicate, or show a definite fibrosis or lesion, it does not always distinguish between the tuberculous and non-tuberculous, and we are left with the clinical evidence only, to arrive at a definite diagnosis.

In these borderline cases, when we have hemoptysis as the ushering-in symptom; after the correllation of all the clinical data, history, symptomatology, combined with the bacteriologic and radiographic findings, and a thorough examination of the chest, if the evidence is not sufficient to warrant a positive diagnosis; if we would conserve the interest of our patients, we should make a provisional diagnosis of tuberculosis, treat and instruct them as we would a phthisical patient until the diagnosis is clinched or disproven. The danger and possibility of a tubercular infection justifies it. It is better to have many diagnostic errors charged to our account, by having placed hemopty-

sis of questionable origin in the tuberculous column, keeping the patient under the shadow of suspicion, administering prophylactic treatment, when later they prove to have come from non-tuberculous lesions than to stand guilty of having placed one single hemorrhage in the doubtful column, as having come from some possible affection of the upper respiratory tract or elsewhere, and without having used every diagnostic method at our command, to prove from whence it came, allow the patient to go his way, only to return later, or to consult another physician and be found suffering with a well developed case of tuberculosis.

From my experience, I would conclude that all patients presenting the symptom of hemoptysis should be looked upon as potentially tuberculous, and treated as such until proven otherwise, if its source of origin cannot be readily and clearly determined, regardlless as to whether they do, or do not present symptoms and signs of a deviation from the normal. Thus, vast numbers of cases of early tuberculosis would be "nipped in the bud" before the precious opportunity of obtaining a clinical cure had slipped by or save the patient from the suffering and inconvenience of a long drawn-out treatment; would contribute materially in preventing the dissemination of tuberculosis; to the decrease in its mortality, and in many instances would save us from the conviction of having committed an unpardonable sin.

INFECTIOUS DISEASES OF THE FALLOPIAN TUBES.*

Dr. N. D. Bitting, F.A.C.S., Durham, N. C.

The greatest significance of tubal disease lies in its destructive effect on the generative organs. Inflammation of the Fallopian tubes is most often due to gonorrheal infection, but also develops as a result of pyogenic or tuberculous infection. In the majority of cases, the germs reach the tubes through the vagina and uterus, traveling by continuity of structure. There is, however, a small group of cases which derive the infection from appendicitis or rupture of some abdominal viscus as a result of gastric or duodenal ulcer, the infection gravitating to the pelvis and attacking the tubes. Finally, the blood or lymph stream may be the avenue of approach in cases taking their origin from tuberculous foci in other parts of the body.

In the early stage of infection the mucous membrane of the tube becomes swollen and congested, and there is a serous, and later a purulent exudate. The muscular walls become red, swollen and edematous in appearance. If the inflammation does not subside at this point it passes into the sub-acute and chronic stages, and the tubes become thickened, distended, and markedly adherent to surrounding structures. They are usually found to be attached to the cecum or small intestine above, or plastered down in the cul-de-sac to the peritoneum, rectum, and sigmoid with the ovaries and uterus. In a very large percentage of cases both tubes are involved, which indicates a uterine infection. Rarely only one is found to be diseased. This indicates infection from the appendix or some point higher up in the abdomen.

A review of a large number of cases operated in Watts Hospital revealed three cases of unilateral involvement, two of which affect the right side and one the left. Not infrequently a tubo-ovarian communcation is formed, giving rise to a large inflammatory cyst or an ovarian abscess.

Tuberculous salpingitis appears to develop mainly as a result of the blood or lymph stream bringing the infecting organism from some remote focus. However, some authorities believe that the disease may develop primarily in the tube, while others think that it is secondary to involvement of the peritoneum. Pathologically, three types have been recognized. In one type the peritoneal covering is studded with tubercles; another shows the mucosa to be swollen and infiltrated with small cells, causing necrosis of the epithelium which disappears and caseous material lines the tube. In the third type the interstitial portion of the tube appears to be the point of attack. Here the giant cells and caseous foci are the predominating factors. This type is due to blood or lymph infection. In the early stage the tube shows only slight changes from the normal, and but few adhesions are present. About one-third

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of the cases form pus sacs, many of which become sterile unless secondarily infected.

Perforation of the tube wall and the escape of the infecting material may give rise to fistulous tracts involving the bladder or bowel. It has been estimated that about 10 per cent of all tubes removed for inflammatory disease are tuberculous, and the uterus infected in seven out of every eight cases.

The clinical manifestations most frequently noted are failure of the general health, with loss of weight and anaemia, pain in the iliac fossae and lumbar region, menstrual disturbances such as dysmenorrhea, amenorrhea, and rarely the opposite condition of menorrhagia and leucorrhea. There are some cases without symptoms. The onset of the disease is usually insidious and the progress slow.

Salpingitis is essentially a chronic disease when surgical interference becomes necessary. Therefore we shall discuss its clinical manifestations from that viewpoint. During the acute stage surgical interference is not necessary but is definitely contra-indicated. The non-tuberculous types have a fairly constant symptomatology in the majority of cases. The patient complains of pelvic discomfort and at times more or less severe pain in the lateral pelvic regions, accompanied by dysmenorrhea, menorrhagia, leucorrhea, and bladder tenesmus, dating back in many cases to the time of marriage. Recurrent attacks of abdominal pain occur for no apparent reason, or they may follow a normal labor, abortion, over-exertion, or precede the onset of the menstrual flow. Backache and sterility are more or less constant factors.

The physical signs elicited by bimanual examination are characteristic. The uterus is fixed and oftentimes retroverted, though it may be pushed forward. The tubes and ovaries are matted together and are attached behind and to the sides of the uterus, forming tender masses more or less irregular in outline, resembling small fibroid tumors, ovarian or broad ligaments cysts.

The diagnosis of chronic salpingitis can usually be made from the history of the cases and the bi-manual examinations. It may be mistaken for small ovarian tumors or cysts, dermoid cysts, myomata, pelvic, cellulitis, extra-uterine pregnancy, appendicitis, diverticulum of the ileum or bladder, and broad ligament cysts. The most constant guide is a retroverted, fixed, tender uterus, associated with tender, elongated masses fixed behind or to the sides, together with the above outlined symptoms.

The treatment is preventive, palliative, and operative. The preventive treatment consists in teaching the laity the terrible consequences of venereal diseases and how to avoid them; also the careless and indifferent obstetrician should be reminded again to take every precaution against puerperal sepsis and contamination of the genital tract. The palliative treatment is especially adapted to the acute stage and the acute exacerbations arising in the course of the disease. Complete rest, local applications of cold or heat, restricted diet, and an occasional enema will accomplish most with this line of treatment.

The surgical treatment is two-fold in its application. It must deal with the disease and its complications. The proper time to operate is an important matter to decide, and calls for the best surgical judgment. No patient should be subjected to operation during the stage of acute exacerbation, because operation at this time is attended with mortality many times greater than during the quiescent stage. It sometimes becomes necessary to establish drainage during an acute attack. This can best be accomplished by opening into the pelvic cavity through the posterior vaginal vault without risk of spreading the infection.

The operative treatment can best be carried out by removing the diseased structure en masse. This usually requires either a complete or sub-total hysterectomy, because the uterus is diseased in all cases in which the infection travels upward. In a very small percentage of cases where the infection comes from structures higher up in the abdomen and where there is only one tube involved, the uterus may be spared. One or a portion of one ovary should be retained whenever possible. The subtotal operation can be performed with greater ease and less danger to the patient and produces excellent results when the cervix is reamed out with the cautery and securely anchored to the round and infundibulo-pelvic ligaments, which prevents prolapse of the vaginal vault. The complete operation precludes

the possibility of a malignant disease developing in the uterine stump, but favors to some degree a prolapse of the vaginal vault with its attending evils. It is slightly more difficult and dangerous to perform.

The most important complications arising in the course of tubal disease are intestinal adhesions, intestinal obstruction, and peritonitis. The first require gentle manipulation and sharp dissection for their safe release. The greatest care should be taken to avoid tearing the bowel wall and spreading the infection. All raw surfaces should be smoothly covered by peritoneum whenever possible. These precautions will lessen very much the number of obstructions which are so prone to develop following inflammatory diseases and the releasing of adhesions. If obstruction develops, no time should be lost in attempting to relieve it. This can sometimes be done by releasing the particular band of adhesions producing the constriction. Other cases will require intestinal drainage or resection. Should the patient be in a condition of shock drainage can be quickly provided by doing an enterostomy. This may give permanent relief. Resection should be done only when the patient is in the best possible condition to undergo the operation.

DISTAL EFFECTS OF FOCAL INFECTIONS.*

By James M. Parrott, M.D., F.A.C.S.,
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Prepared for the Onslow Medical Society, January, 1921.

The importance of this subject is my only excuse for discussing so hackneyed a theme. It is an old story but one worthy of reconsideration and frequent investigation. Aside from the transmissible diseases, I doubt not but that focal infections are the cause either directly or indirectly of more invalidism, inefficiency because of ill health, mental deficiency, premature old age, as commonly expressed by the term arteriosclerosis, and deaths than any other one cause. The mere suggestion that high blood pressure with its resulting causes or effects (the degenerative diseases other than malignancies) are often produced by focal infections at once forces the realization of the strong statement which I have just made. Every practitioner, even one of limited experience, is often impressed with the importance of so-called "self-poisoning."

The role of focal infectcions in producing diseases has been recognized for many years. Only comparatively recently, however, have we been able to put our finger on the exact causes and understand in more or less detail the way in which the effects are brought about . Thirty years ago physicians were beginning to associate rheumatism with tonsilitis; today we know beyond doubt that infections of the tonsils frequently produce involvment of the joints. We have made considerable progress in that we have gone from association to effect. Eight or ten years ago an observer in one of the large research laboratories noted that the administration of the macerations of an infected appendix would reproduce appendicitis, ulcer of the stomach, or infection of the gall bladder. I do not think that there is a doubt but that acute abdominal conditions are often caused directly from infection in some other parts of the body. I presume that every careful observer will agree that this statement is correct. If time permitted I could go on and cite instance after instance in which various organs have been involved because of distal effects of focal infections. A focal infection, however slight, is a serious matter.

While certain kinds of infections seem to have a predilection for particular locations in different parts of the body, no one can say definitely beforehand just what remote organ or structure may be involved. For example, streptococci from the tonsils seem to have a special propensity for the appendix or for the joints. This so-called predisposition on the part of the organism is intensified in the presence of a pneumococcal involvement. The so-called arthritis deformans is more often caused by colon bacilli in a tonsil. The staphylococci seem to have a predilection for bony structures. With certain environments, which seem to effect their virility, streptococci and staphylococci frequently select other parts of the body for the new home other than the structures mentioned.

The degree of severity of a focal infection is not an index of the amount of systemic or distal effects which may be expected. A very small local abscess

or infection may cause a very severe disturbance at a distal point. For example, a small apical abscess may produce a severe attack of cholecystitis, afulminating appendicitis, endocarditis, etc. While a very large draining abscess, for example, from the appendix, might not cause any systemic effect other than those of a passing moment.

Several years ago the text books on surgery without emphasizing the very theme of my paper recognized it by the classical division of all infections as sapraemias (absorption of toxins), septicaemias (toxins plus germs in the blood), and pyaemias (toxins plus germs in the blood, plus abscess at a distal point). For the purposes of study it now appears well that all focal infections be divided into two classes, those which produce their distal effects by toxins, and those which produce effects by migration of micro-organisms. As an illustration of the first type, let me call your attention to diphtheria, the constitutional effects of which are due to toxin, whereas the germs are confined to the throat. However, let me illustrate by suggesting a condition which seems to be proven conclusively that iridocyclitis which sometimes follows operations on the globe is not due to infection so often as to a toxin. Browing, in the March, 1920, issue of the British Journal of Opthalmology, takes the position that gonorrheal iritis is a toxic condition and is not due to the presence of gonococci in the eye. Sidler-'Huguein has been able to isolate the gonococci in only one eye and then only from the blood-stained exudate from the anterior chamber. He has not been able to cultivate the gonococcus or find organisms in direct smears from the gelatinous exudate from cases of gonorrheal iritis. Butler's cataract work, which was reported by him in detail in the British Journal of Opthalmology in July, 1919, forces the conclusion that most of his failures were due to a local toxemia rather than to an infection. Butler says, "I have come to the conclusion (I admit that it is a dangerous one) that iridocyclitis is not always the effect of an infection from without." He closes his fifth reason for saying this with the statement: "I now pay a great deal of attenion to the condition of the teeth and refuse to operate (for cataract) in the presence of pyorrhea alveolaris."

As an example of the second class of distal effects of local infections, let me quote a recent report from Samuel McClary III, of Philadelphia, who says: "I have learned that Frank Billings of Rush Medical College, last year innoculated a rabbit with streptococci culture from the tonsils of a woman of fifty, which developed an acute arthritis and died in a few days. The streptococcus was regained from the infected joints of the rabbit, since then he has innoculated many rabbits and gotten streptococci cultures from them and has succeeded in producing arthritis in more than thirty instances, in all of which he regained the streptococci from the diseased joints. Similar experiences are now being made by Davis. His conclusions thus far correspond to those of Billings."

A few years ago when we had the opportunity to do so numbers of cases of acute appendicitis were studied at our institution and it was frequently the case that the same organism, morphologically speaking, was obtained from the removed diseased appendix as was found by investigating the tonsils. Of course, our evidence is not conclusive; but it is certainly suspiciously so.

A few years ago a number of our best men were swept away with enthusiasm by this subject of focal infections, and almost all kinds of ills to which human flesh is the heir were ascribed to some kind of infection. As a result of this over-zealousness numerous unfortunate results were obtained. Many teeth were extracted which were innocent, under the false idea that perhaps the tooth was the cause of a rheumatism or some disturbance somewhere in the body. The pendulum swung too far in the direction of tonsilectomies, and many tonsils were sacrificed. The loss of the tonsil per se of course cannot be compared to the importance of the loss of the teeth; but it was very unfortunate that a patient be subjected to the more or less risk incurred by a complete tonsilectomy and yet have a continuance of the symptoms which brought the patient to the operating table. Parenthetically, let me remark this criticism may be offered for appendectomy, experienced physicians have seen many cases of so-called appendicitis operated without benefit and the patient turned up ever and anon with complaint of pain in the right side unrelieved by the operation.

As a result of too much enthusiasm and too little judgment, both sustained by incomplete accurate knowledge, many are asking the question, is there very much in the idea of focal infections? This reaction is unfortunate. I believe that now we are getting on sane ground in our views concerning this really vital question.

Our records and references contain and indicate large numbers of cases, illustrating both types of distal effects of focal infections. I shall recite a number which occur to me as being very interesting and instructive:

Case 1: Amanda G., negress, age about 65. She presented the usual symptoms of senile cataract in both eyes. The first operation was successful. The operation on the second was followed three days later with an iridocyclitis. She had 20-20 vision with glasses in the first eye operated, the second, practically no sight. A careful investigation in this case revealed the presence of highlly infected mouth. This, unfortunately, was overlooked at the time of operation. Should such a case present itself again, without hesitation I would not operate until the mouth had been placed in a sanitary condition. I cannot explain why there was such good results in the first operation. I am quite confident that the iridocyclitis which developed after the operation on the second eye was due to toxemia from the mouth.

The iridocyclitis in this case was strikingly similar to the type of iridocyclitis which is occasionally seen following blows on the eye in the aged and infirm. Of course it is possible that it could have been the result of an infection from without; however, I am quite satisfied that it was not. Butler in his very illuminating paper to which reference has already been made states that he operates in the presence of a few colonies of staphylococcus albus or citreus but refuses to do so if the staphylococcus aureus, streptococci, or pneumococcus grow in a culture obtained from the conjunctiva or lacrimal sacs. He states that in his experience in Palestine he never had a case of iridocyclitis, this in spite of the fact that almost all the eyes on which he operated had trachoma and chronic conjunctivitis.

Just here let me remark that Novitzky of San Francisco has very emphatically and clearly called attention to the importance of proper handling of dead teeth. He rather takes the view that a dead tooth is a bad tooth and ought to be removed. I recognize the fact that we were inclined to be too radical for a long time in reference to the removal of teeth. I am afraid now we will react too far in the other direction and leave in too many teeth. I do not believe a tooth should be extracted until after it has been subjected to very careful study, especially by radiographs. If the tooth is more than doubtful, it is generally the cause of a serious reinfection, and it ought unquestionably be removed. The simple enucleation of the tooth, in my opinion, is not all that is necessary; it's cavity should be carefully cureted and treated just as any other abscess.

Novitzky says: "Every tooth from which the pulp has been removed or in which the pulp is dead is in every sense of the word dead. Every dead tooth within six months of the time of devitalization is infected. The infection spreads to the bone and the tissues surrounding the tooth root and commonly results in a focus of infection in the jaw. Such a focal infection is a menace to health."

Case 2: J. T., age 42, presented, giving history of attacks of so-called iritis. A careful study of his case revealed an infection of the pelvis of the kidney, probably of gonorrheal origin. The case was carefully handled with this idea in view, and there were no further attacks.

De Schweinitz in a recent article in the International Clinics says: "In order to avoid confusion Mr. T. Harrison Butler states that the term traumatic should be eliminated as descriptive of a case of iritis and that these forms of iritis should be designated as auto-toxemic. The experience of the latter years has rather indicated the correctness of Mr. Butler's view." De Schweinitz has proven conclusively that a relapse in iridocyclitis may be due to tonsillary infection. From his citation of a case I quote as follows: "A more searching examination from the general and laboratory standpoint failed to discover a malady. There was no buccal sepsis, and in point of fact, apparently no mucus membrane infection. Although several examinations of the nasopharynx had been made all the conditions re-

ported negative. I urged additional and more careful examination and was awarded when an accumulation of foul pus back of the left tonsil was discovered teeming with streptococci. As soon as this area was brought into a normal condition, the attacks ceased and have not recurred." De chweinitz's observation that the uveitis of the tonsilar diseases are apt to be homolateral does not coincide with my observation. De Schweinitz's refers to another case of acute uveitis due unquestionably to tonsilar involvements.

Case 3: Mrs. X., age about 30, complained of dimunition of vision. Careful investigation disclosed optic neuritis. Repeated examinations, including radiographs of teeth, showed two or three tooth-root abscesses. She gave a history of having had a similar attack of lessened vision two or three years prior to the time of my examination. Extraction of the infected teeth restored her vision promptly and she has had no attacks since. This woman, undoubtedly, belonged to the first group of cases showing distal effects from focal infections—that is toxemias.

Case 4: Henry H., age 28, presented with the usual symptoms of an afulminating appendicitis; on the fifth day of the attack, abdomen was very much distended, pulse rapid, temperature 101, intestinal paresis, timpinitis, anxious expression, dilated pupils, cold moist skin. Had never had a similar attack. Abdomen promptly opened; cultures from the gangrenous appendix were the same type morphologically as those obtained from very badly infected tonsils —streptococci. I am quite sure this young man's case was due to streptococci from the tonsils lodged in the appendix.

Three or four years ago at our hospital we followed carefully every appendix and gall bladder operation. In almost every case (more than 80 per cent) we found either infected teeth or tonsils. In a large percentage of the remainder, we found pus in the urine, or chronic ear discharge, or chronic suppurative infection of one of the antra or sinuses. Of course our findings were not conclusive; but they were overwhelmingly convincing to us.

Case 5: H. T., age 12, when admitted to the hospital presented usual symptoms of suppurative osteomyelitis. She had attacks before and had been subjected to the usual bone operation for such condition. The attacks occurred at intervals of several months. Careful investigation showed that she had infected tonsils. I have seen two or three cases similar to this.

Ochsner and Crile in a recent article state the following conclusion relative to handling these cases of recurrent osteomyelitis: "In such cases recurrence seems to be due most commonly to the fact that the primary source of infection was overlooked and so the patient suffers from re-infection rather than a recurrence in the usual sense of the word. Many of these patients state that they had a cold or sore throat or toothache just before their osteomyelitis recurred. Upon making a careful examination one finds a buried tonsil containing an abscess or an abscess at the root of a tooth, or some other focus of infection. For thirty years we have removed these infected tonsils and roots of teeth, many such cases in which recurence had occurred and patient has remained free from trouble for a number of years."

Case 6: Mrs. E., forty years old, consulted me for severe pains radiating over her right eye and throughout right side of face and because of a rather foul nasal discharge which had proceeded for some months. Examination revealed an infection of the right antrum. During the course of the conversation she stated that she was troubled with nervous attacks, erratic pains throughout her body, and especially in her extremities, erructation of gas, disaggreeable taste, pain in epigastric region, one-half hour after eating, distended abdomen, persistent constipation. Her blood pressure was 170, heart erratic, with increased rapidity, though not excessive, skin muddy, expression dull and languid, attacks of vertigo, with almost constant dull occipital headaches. Examination showed infection at the root of the upper molar tooth and decided suppuration of a chronic character of the right antrum. The tooth was extracted and the antrum properly treated, advice given concerning constipation, and the patient made rapid recovery of general health. Indigestion cleared away, pains discontinued, nervous symptoms ceased, blood pressure fell to practically normal, and within two or three months she was altogether another woman. This was undoubtedly

a case of systematic effect from infection of a local character.

Case 7: Mrs. L., age 43, was referred to our hospital for some X-ray work by a physician who stated that she had given history of having had repeated and accelerated pain through hips and knees with only a minimum amount of swelling. This so-called rheumatic condition continued at intervals over a period of two or three years. She was almost desperate. On investigation her oral hygiene was found to be good. Radiographs showed apical infection of six or eight of the teeth at the right. With considerable reluctance extraction of these teeth was advised. She readily consented. One year after enucleation of teeth she wrote she had had no symptoms whatever of the pain and was exceedingly thankful that the case had been handled in the way in which it had.

Case 8: Little Mary, age 11, came with repeated attacks of tonsilitis, examination showed mitral regurgatation. Her family physician assured me she had had an attack of so-called sub-acute endocarditis several months before. She gave a history of a few attacks of acute inflammatory rheumatism. The tonsils were removed; they were badly infected. Her general health markedly improved, though of course the leakage of the heart continued. Though we have no way of proving definitely this cardiac disease was due to infection from the tonsils, yet we are morally certain such was the case.

As intimated in the beginning of my paper, I do not think there is any question but many of the various forms of senility or diseases of degeneration other than the malignancies are due to the toxemias or migrations of organisms from focal infections. If we are to further increase human longevity, I believe we must do it largely by detailed study of the body for focal infections, the removal, and prophylaxis of the same. The lowered resistance of the body incident to focal infections certainly renders one very much more susceptible to acute transmissible diseases. Summing then, I insist that the recognition and removal of the focus is imperative as a fundamental principle in the efforts to increase human efficiency and longevity because in so doing resistance is increased and degenerative diseases moderated and diminished.

Billings says the recognition and removal of the focus is as imperative as a fundamental principle to stop the progression of ill health. Rosenow gives the following conclusion:

"The experiments on mutation show that when these and other streptococci are grown in symbiosis with other bacteria, and under a low oxygen pressure, they may acquire new features, and that sometimes they undergo marked changes on passage through animals. The places in the human body where such conditions prevail, and where special features are likely to be acquired, are parts of infection such as in the tonsils, various sinuses, the appendix, and about the gums and teeth.

"The strains from muscular rheumatism, especially after one or two animal passages, as well as other streptococci when they have attained a similar grade of virulence, show a marked affinity for the medullary portion of the kidney and the gall-bladder. Ulcer of the stomach, the picture of an 'ascending' nephritis, cholecystitis with beginning formation of gall-stones, caused by streptococci, have been found repeatedly in rabbits and dogs injected with strains, especially after one or more animal passages.

"The essential element in favor of the mutation of pathogenic micro-organisms in the human body is that the foci may be suitable for their long continuance of these situations.

"Obviously then acute inflammatory conditions, the cardinal symptoms of which demand more or less immediate relief, or abscesses in which a sinus gives an exit to pus, distressing or even alarming as these often appear to be, are not, as a rule, the affections that are of most serious etiological importance.

"Hence the comparative general limitation of acute diseases of the periosteal, osseous, or other tissues of the mouth as causative factors to the effects of acute infections. It is the so-called blind abscesses, the granulomata, which seldom give rise to noticeable symptoms that favor the continuance of bacteria in these foci, which gradually increase in size as surrounding bone absorption takes place, that may so often be held accountable for remote chronic diseased conditions. Many authorities now agree that focal infections of this character may have an im-

portant relation to cases of rheumatoid arthritis, iritis, endocarditis, myocarditis, ulcer of the stomach, disease of the kidneys, or anemia, leukemia, and other affections manifesting themselves through blood disturbances; chorea and many similar disorders of almost unlimited extent, or pathological manifestations touching the brain, spinal cord and nerve structures in which infection may play a part."

In an article published sometime ago in the Dental Summary, Hebble gives some very interesting facts and figures which he has collected relative to the distal effects of oral infections. Irons in the Journal of American Medical Association, Sept. 16, 1916, and Uldrich in the November, 1915, Journal of the American Medical Association and numerous other writers have confirmed the reports of Hebble and other workers as to the unusual and damaging effects, systemically and distally, of apical abscesses and septic gums. The evidence both scientifically and clinically is positively overwhelming. The things these men have written and other men have demonstrated in reference to dental infections may be said over and over again in substance regarding other focal infections, especially the tonsils, sinuses and kidneys.

DYSPNEA.*

By Alexander G. Brown, A.B., M.D.

In my clinic tonight I wish to briefly discuss disturbances of respiration as evidences of grave internal diseases particularly directing your attention to dyspnea. I shall presently demonstrate before you on one of my cases here in the Memorial Hospital some diagnostic methods of determining pleural effusion as a cause of dyspnea, and then shall aspirate for the fluid which I feel is present.

Disorders of breathing are as distressing to patients as they are ominous signs of many grave internal diseases. The practitioner, naturally, through sympathy for the patient and because of this interpretation of these symptoms meets any marked disorder of the respiration with concern.

Carbon dioxide is the essential stimulus to the respiratory center. A rise of 0.2 per cent of the carbon dioxide content to the alveolar air causes respiration to be double. Winterstein and Hasselback, cited by Peabody in a recent article on cardiac dyspnea, demonstrated that the respiratory center is sensitive not only to carbon dioxide but to any increase of the acid radicals of the blood. Metabolism is the source then of respiratory stimulation.

The frequency and rhythm of the respiration in the healthy adult is from 16-20 per minute, while in the newborn it is 44 per minute. When the respiratory rate ranges from 40 to 60 per minute it is called tachypnea. Tachypnea is seen in such disorders of the respiratory system as laryngitis, bronchitis, pneumonia and pleurisy; (2) in heart diseases; (3) conditions in the abdomen as ascites, tumors, peritonitis; (4) in disturbances of the nervous system as vagal attacks and hysteria. When the respiratory rate is very slow, we call it bradypnea. This is found in diseases of the (1) brain and its membranes, (2) irritations of the respiratory center, (3) severe infections, (4) uremia, (5) diabetic coma (air hunger). When the respiration is characterized by a period of complete cessation followed by gradually increasing frequency and volume until its maximum rate is reached and then followed by gradual decrease of the rate of respiration until it is again suspended, it is called Cheyne-Stokes Breathing. This type of breathing is commonly observed in (1) late stages of cardio-renal diseases, (2) arteriosclerosis (cerebral sign), (3) brain lesions (apoplexy, embolism, brain tumors). (Read Barker Monographic Medicine).

Dyspnea is difficult breathing. Shortness of breath may be due to inspiratory obstructions as seen in laryngeal diphtheria, laryngeal oedema, or oedema of the glottis, croup, tumors pressing upon the wind pipe or foreign bodies in the respiratory tract. Again, shortness of breath may be due to expiratory conditions as seen in emphysema, asthma, pulmonary oedema. Most commonly dyspnea is a mixture of both inspiratory and expiratory conditions and is known as mixed type of dyspnea. When a patient shows a dyspnea one must think of three general causes, and certain miscellaneous causes for explana-

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A clinic at Memorial Hospital, Richmond, Va.

tion, of it as well as for a remedy for its relief. In the respiratory organ and its coverings we naturally look for an explanation. The following conditions may cause dyspnea: oedema of the glottis or larynx, acute or membranous laryngitis, spasm or paralysis of the larynx, bronchial asthma; lobar pneumonia, pulmonary oedema or congestion (active or passive); chronic pneumonia; tuberculosis, emphyema, carcinoma of the lungs. Pleurisy with effusion (serofibrous or purulent) empyema; hydrops; pneumothorax; paralysis of the diaphragm; mediastinal abscess or tumor.

In the cardio-vascular system dyspnea is a common symptom and requires interpretation as to its cause. Cardiac lesions which reach the point of broken compensation show dyspnea with or without exercise: aortic regurgitation and aortic stenosis (alone or combined) mitral regurgitation and mitral stenosis (alone or combined) with failure of right ventricle and with failure of right ventricle and auricles (cardiac dilatation after hypertrophy). Angina pectoris, cardiac flutter; congenital heart disease are also causes of dyspnea. Pericarditis with effusion or hydrops of pericardium is also a cause.

The disease of the kidneys and disorders of the urine are also associated with dyspnea. It is seen in its ugliest mood in chronic nephritis with uremia. In glycosuria (diabetes) when acidosis (occasioning air hunger) dyspnea is a loud and boisterous sign of oncoming coma.

In certain independent conditions also difficult breathing is complained of by patients. In secondary and pernicious anemia, in goiter and tetany; in Hodgkins' disease and certain nervous diseases it appears. It is seen also in abdominal dropsy, tumors and peritonitis.

Now, I call your attention to the case before us.

A word of history: A white man, age 26 years, with good family history, entered Memorial Hospital, January 4, 1918. Never had any sickness till November 16, 1917, when he was taken with swelling of the testicle and pain in that region. He suffered with this orchitis for about six weeks when he was brought to the hospital.

Examination on admission showed a large orchitis, a urethral discharge, arthritis (wrists and elbow), no fever. He was placed on usual gonorrheal treatment, gonococci having been found in urethral discharge. Wassermann was negative. Orchitis improved and urethral discharge disappeared, but arthritis grew worse.

Heart, after three weeks' treatment, showed systolic murmur, in increased transverse diameter, general cyanosis, while kidneys showed diminished permeambility. General anasarca appeared. Severe pain in right axilla was complained of. Dyspnea began to harass the patient. The diagnosis was acute myocarditis and nephritis following gonorrheal infection of genital tract.

Dr. Heyman, of the house staff, in going over this patient, suspected fluid in the right pleura. This, by examination, made on my rounds, confirmed. So, at once, January 27, 1918, we aspirated and secured a large amount of fluid. This showed no elements of an inflammatory nature. It was hydrops from myocarditis and renal insufficiency.

I will now make a rather rapid physical examination of the patient pointing out to you a few prominent physical signs and try to secure fluid, if present. You observe, the distinct bulging or fullness of the right thorax, the limited movements on the right; the abdominal type of breathing; the prominence of the egigastrium.

On palpating we observe that the right is more fixed than the left; tactile and vocal fremitus over the right is absent; the liver is felt below the costal border.

By percussion, we observe, as we come down the chest dullness and eventually flatness. This is very evident to you, is it not, at that distance from the patient. You note that the flat note is at its lowest level posteriorly, at its highest as we come to axilla, descends as we percuss anteriorly.

Now, with the stethoscope I observe absence of breath and voice sounds over right middle and lower thorax, while on the opposite side they are increased in distinctness.

Puncture of the plueral cavity is not done as often as it should be. It affords a ready means of diagnosis of and also of relief from excessive plueral fluids.

After rendering the skin clean and swabbing it with iodine, the right arm of the patient is pulled to the left. I select the seventh intercostal space

about mid-axillary line as the point for puncture. After injecting a few drops of a 2 per cent cocaine solution under the skin and into the intercostal muscle, with the aspirating needle, I enter the interspace close to the upper margin of the rib beneath, thus avoiding the intercostal artery. With a distinct feel the plueral cavity is reached and the exudate is observed. I now attach the needle to a vacuum bottle which makes a uniform suction by an air pump run by a motor.

You observe the deep yellow fluid flowing into the bottle.

ACTIVE AND PASSIVE IMMUNITY.

By Dr. H. S. Kahn, M. D., Toledo, Ohio.

Several years ago, while teaching the subject of Immunity at the Postgraduate School, Chicago, I found that the general practitioner did not have a clear understanding of the subject dealing with modern biologic therapeusis. The subject of Immunity, at that time still in the hands of the research man, and being more or less in its infancy as far as its practical application, there was, of course, a just cause for the general man to be disinterested in it. But at present, in the era of vaccine and serum therapy, I can see no logical reason for any man in the practice of medicine to show any deficiency or to display a lack of interest in the study of Immunity.

And still, while most of us will agree with the last remark, we find that men engaged in the general practice of medicine very frequently, either through carelessness or actual lack of knowledge, persist in interchanging the terms vaccine and serum. It is this promiscuous interchanging of immunological terms which stimulates me to write this paper, hoping at the same time to point out a few facts in active and passive immunity.

At the outset it may appear strange that when, through carelessness terms are interchanged, it is "serum" which is used rather than "vaccine." For in the historical development of immunotherapy the variola virus emulsion, commonly known as vaccine, was the first to be introduced. Tracing the subject a little farther, however, we find that the scientific investigation and practice of immunity, started by Pasteur in the middle of the nineteenth century, developed into the practical use of immune sera. Later, von Behring in his introduction of Diphtheria Antitoxin in 1883, and its universal acceptance by the practitioner, fixed the term "serum" in the minds of the profession to such a degree that it was, and with some still is, the first term to think of in association with biologic therapy.

In spite of the fact that tremendous strides have been made in the study of immunization on such a scientific and practical basis that we no longer, with but few exceptions, administer anything but a vaccine in most infections, the term "serum" is undoubtedly used because of the early impression. A parallelism of this may be found in the impression made upon the medical profession by the great pathologist, Virchow. In investigating this branch of medical science, he left imprints so strong upon the minds of the profession that, regardless of the endeavors, Bacteriological, Serological or otherwise of a laboratory man, he is invariably called a Pathologist. Regarding the interchange of terms, and incidentally to point out what is meant by vaccine, or serum, it will not be amiss, although it may appear quite elementary to some of us, to differentiate the nature of the two products.

A serum, an immune serum, or as it is often called; the name of the animal from which the product is derived with the word serum added to it, is the liquid portion of the blood of some animal, which has been naturally or artificially inoculated with some micro-organism, and wherein specific anti-bodies against this organism or the toxin of this organism have developed. In this nature this applies to any animal or human being which has been or is now suffering of some disease. In the laboratory, a serum may be produced by inoculating any susceptible animal with an organism, and after a certain interval of time using this animal's serum. Vaccine is a suspension of dead bacteria in a physiological solution. It is the causative factor of a serum. It is evident, therefore, that in administering a serum the individual receives antibodies which some other animal has prepared for him. In other words, said individual receives a passive immunization toward a specific malady. To express it crude-

ly, to receive a serum is to get a predigested substance into the system. It is also evident, from what has just been said, that in administering a vaccine the individual receives the organisms themselves; not material which has passed through an animal, but the cultivated dead bacteria constitutes a vaccine. The recipient of this product becomes actively immunized toward the specific bacterial emulsion and has to create his own antibodies.

The above remarks naturally bring forth the following question: When should a vaccine and when should a serum be administered? A few years ago an answer would have been simple and decisive, viz.: "In all acute general infections use a serum. In all chronic localized or semi-localized conditions use a vaccine." But in the light of more recent knowledge and investigation, and corroborated by much practical experience, it is found that no such sharp drawn lines may be established. Since almost any every-day procedure in vaccine therapy contradicts this classification. Let us take typhoids. According to the early teaching of biologic therapy a serum is the proper prophylactic and curative agent of this disease. But practically we have found this not to be the case. Is there, then, any law by which we are guided determining the choice of active or passive immunization? This question I expect in a future paper to discuss carefully from a practical and scientific aspect.

In conclusion, I wish to say a few words toward the encouragement of Immuno-therapy. Because of the present era of enlightenment in medical science this to some, I am sure, may appear quite superfluous, nevertheless, I am tempted to cite the following instances.

Some time ago I was approached by a physician upon whose neck a carbuncle had been developing. "What would you suggest for this?" he asked. "An immediate inoculation of vaccine, of course," I replied. He said nothing, and did not follow my advcie, but some time later related this to me. Upon the same day, he met a pathologist of international reputation, and mentioned the fact to him that I had recommended vaccine treatment. The pathologist replied, "It would be advisable for you to postpone the treatment for a few days, so that you may fully appreciate the prompt relief obained in such cases through vaccine treatment." I cite this incident to illustrate the positive responses pertaining Immuno-therapy, received from men ranking high in the profession.

The next case is one of general interest.

L. S., male, 34. The patient was sent to me by his dentist. He had a cavity 1½ cm. in depth, and 3/10 cm. in width, in upper gum over left canine. It developed through a "little chancre," as he called it, four years ago. The dentist treated it with caustics and antiseptics with no effect upon the cavity. Due to the gathering of pus around this tube, it was not satisfactory. The dentist removed the tube and instructed the patient to syringe and pack the cavity daily with iodoform gauze. After two years, with no perceptible result, the patient returned to his dentist for further advice. The man was sent to me. Upon microscopic examination I found the condition to be a pure short chain streptococcus. I made an autogenous vaccine and gave the man an initial dose of 25,000,000. I followed this with eight other injections, three days apart, with the maximum dose of 300,000,000. There was a slight change; a little more discharge, the cavity a trifle narrower and slightly healthier. I did a Wassermann test and found it negative. Having administered the said quantity of vaccine, and not getting what seemed the proper response, I discharged the patient as not cured. But several weeks later I was pleased to receive a report from his dentist that granulation set in and the cavity entirely healed.

In summarizing let me suggest the following:

Every practitioner ought to know the difference between serums and vaccines. He must understand the underlying principles of active and passive immunity. He should not fail to apply these principles in a practical form in his daily practcice of medicine.

The next annual meeting of the North Carolina Medical Society will be held at Pinehurst, N. C., April 26-27-28. The Health Officers' meeting will be April 25.

SOUTHERN MEDICINE AND SURGERY

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M. L. TOWNSEND, M. D. Editor

CHARLOTTE, N. C.

"Read not to contradict and confute, nor to believe and take for granted, nor to find talk and discourse, but to weigh and consider."—Francis Bacon.

SOUTHERN MEDICINE AND SURGERY IS MADE OFFICIAL ORGAN OF THE TRI-STATE SOCIETY.

After this issue was made up arrangements have been completed with the executive council to publish in this journal the proceedings and all of the papers read at the Spartanburg meeting and for each member of the society to be placed on the mailing list up to and including the February, 1922, issue.

We shall endeavor, in so far as possible, to arrange the make up of each issue so that those who wish to do so may detach the rest of the journal and bind only the society proceedings at the conclusion of the volume.

Southern Medicine and Surgery shall continue to solicit original articles of real worth and helpfulness from doctors generally so that in addition to the eighty papers prepared for the Spartanburg meeting we hope there will be many more. Obviously space will prohibit the publication of any papers not read before the Tri-State meeting that do not show genuine merit and the editors will be compelled to decline such as do not measure up to these standards.

Emphatically, we do not presume to encroach in the least degree on the field of service so ably filled in this section of country by the Journal of the Southern Medical Association or the Journal of the American Medical Association but we do wish to use our very best effort toward building up the most possible, our small component parts of these great associations. The idea must ever be kept in mind that the stronger and better we make our county societies, state societies and the Tri-State Society, the more we will do, as component parts, toward helping the Southern Medical Society and the American Medical Association to accomplish their high ideals of putting the medical profession on the highest possible plane of efficiency toward making the world better and alleviating the ills of mankind.

THE TRI-STATE MEETING AT SPARTANBURG, S. C.

Every indication for a great meeting of the Tri-State Society at Spartanburg was more than fulfilled. It was indeed a meeting that will leave a permanent impress on the general good of the medical profession of the Carolinas and Virginia.

The attendance was large and the enthusiasm larger. The papers and discussions were of the very highest character—no society ever had a better program. We believe every member returned home feeling the time had been well spent and that he had been abundantly helped.

Dr. W. W. Fennell of Rock Hill, S. C., was elected the next president and Norfalk, Va., was chosen as the next meeting place.

Dr. Jas. K. Hall, Richmond, Va., was of course elected to succeed himself as secretary.

After the opening session in the auditorium of the Cleveland Hotel the society was divided into two sections, the medical section meeting in the auditorium and the surgical section in the Chamber of Commerce. All surgical papers and illustrated papers were read in this latter room.

The public session Wednesday night was held in the First Baptist Church. At this meeting Dr. Lewellys F. Barker discussed in lay language "The Management of Patients Manifesting High Blood Pressure," Dr. W. A. White (Washington, D. C.) gave "Some Suggestions Which Psychology Has to Offer to the Understanding of Chronic Diseases;" Dr. Albert Anderson, Raleigh, read a paper, "Some Considerations on Hospital Management" and Dr. Wm. P. Cornell, Columbia, made "A Plea for a Systematized Tri-State Professional Fight Against Infant Mortality This Summer."

The attendance at this meeting was crowded and the public were given a healthy insight into the inside motives and workings of this society, which as individual doctors and collectively as a body holds in its hands the responsibility for the health and general welfare of the millions of people in these three states.

All the scientific sessions were well attended and the interest did not in the least abate until after the last paper was read and the final adjournment.

Unlike some former meetings there were very few papers on the program that were not read.

The spirit pervading the entire meeting was to give and to get the very most possible good from every moment and every member seemed well satisfied that this had been most successfully attained.

Future of Private Medical Practice.

The conditions which have lowered the efficiency and prominence of the private medical practitioner are analyzed by Frank Billings, Chicago (Journal A. M. A., Feb. 5, 1921), and he suggests measures which may restore the practitioner to the position which naturally belongs to him if the program for more efficient medical service to the public shall become successful. Billings says that those physicians who have had the opportunity to take advantage of the knowledge given to the world by the investigations made by laboratory and clinical workers have been able to keep in the front rank of medical knowledge and practice. Lack of opportunity and peculiarties of environment have kept the general practitioner in the background. In general, he has been neglected and left to fight his own battles.

Surgeons and physicians who have acquired position and leadership have not had the vision or the unselfishness to plan ways and means for the improvement of the status of the general practitioner. As a result, he has sought the easiest way to attain the main object of his life; that is, the acquisition of sufficient financial remuneration to secure a decent living. Billings states that his experience of years in a consultation and referred practice is that many practitioners neglect even to make a physical examination. Neglect on the part of those who should have acted long ago in the interest of the general practitioner, and his own apathy, have developed a condition in the profession which is harmful to him and detrimental to the public. The proposal of the statutory enactment of compulsory health insurance by many states has been a cause of much discontent, unrest and fear in the medical profession. The resulting uncertainty as to the future of the private practice of medicine has been and is a cause of lessened efficiency of the practitioner which is detrimental to him and to the patients he serves. Primarily, the correction of conditions for the improvement of the status of the general practitioner implies the relation of the medical profession to the lay public. The factors which will improve the conditions of country practice and which may attract physicians to the country include the fundamental improvement of the environment of the country doctor. Rural life must be made more attractive.

Better Diagnostic Facilities.

But of special importance is the need of facilities for the diagnosis and treatment of the rural population. Medicine and surgery, including all of the specialties, must recognize their interrelations, and in operation must be coordinated as the cells and the organs of the body must be co-ordinated if a healthy organism is to exist. Disease and its results should be studied, and when the morbid condition is correctly recognized, appropriate treatment may be given. Those who are responsible for the education of the medical student should readjust the curriculum for even greater training in the fundamental branches of medicine, and especially to add greater emphasis to applied science: to readjust the clinical curriculum, with emphasis to be placed on the training in general and special pathology, in physical and functional diagnosis, and to the training in the recognition of disease by actual contact with the patient.

Students Should Study Patients.

The student should be made to understand that the main problem of his present and future is the study of and recognition of morbid anatomy and modified physiology. Turn out graduates who are well grounded in all of

the fundamentals pertaining to the general practice of medicine. They cannot become surgeons or specialists until they shall have studied and practiced for a sufficient length of time to qualify themselves. We must secure the cooperation of those qualified to investigate and invent new diagnostic instruments and laboratory methods of diagnosis to supplement the published results of their work, so simply phrased that the average practitioner may understand and apply selected simple tests and methods in his diagnostic work.

Group Practice.

Group practice is considered by most members of the profession as a distinct advance in the methods of medical practice. This is undoubtedly true so far as it pertains to the members of the profession forming the group and that part of the public sick and injured who receive service from the clinic. But if group practice is to succeed in the sense of improvement of medical service in any given community, then the policy pursued must include efficient service and fair dealing with the whole public, both lay and medical. Group practice must deal in a broad-minded, unselfish and sympathetic manner with the physician in the district which it serves. **Compulsory health insurance**, Billings believes, would be unsatisfactory to the people it is intended to benefit. In the main, it is class legislation, which usually brings injustice to some other class than those it is intended to help. Its alleged advantages to the laboring class does not solve the problem of better and more efficient medical service for the people whom it is intended to benefit. Its application will be more likely to degrade the members of the medical profession who become its servants.

State Board of Health Clinics.

There is a tendency on the part of the federal government (U. S. Public Health Service) and of the departments of health of some states to establish clinics for the treatment of certain diseases. There may be rational grounds for this policy in sparsely populated regions of the country which are not provided with a sufficient number of resident physicians to care properly for the sick. With this exception there is no rational basis for this sort of paternalism on the part of the federal or of the state government. The state properly may standardize and enforce certain rules of procedure: notification, methods of disinfection, and the like, for the medical practitioner in the management of patients who suffer from communicable diseases; but the treatment must be left with the physician. **Health centers** are endorsed by Billings. He discusses the organization of such a center, its management, financial support, and functions. He recommends that as the representative body of the organized profession, the state medical society should formulate standard rules and regulations for the uniform action of the county and district medical societies regarding their relations to the health centers. These relations include the appointment or election by the county or district medical society of the medical board of management of the center, the promotion of post-graduate medical work in the center, the compilation of a uniform rational fee bill, and other objects which require uniformity of action.

The National League of Nursing Education

will hold its twenty-seventh annual convention at Kansas City, Mo., April 11 to 15, 1921.

The program will include subjects relating to nursing education and its relation to hospital development and public welfare.

Arrangements for hotel accommodations may be made with Mr. Frank M. Robinson, Secretary, Bureau of Conventions, Chamber of Commerce, Kansas City, Mo.

ALICE H. FLASH,
Secretary.

The National League requests that through State Leagues invitations to attend this meeting at Kansas City shall be sent to medical and lay superintendents of hospitals, presidents and members of boards of directors or trustees and to training school committees.

As the time is so short the North Carolina State League takes this method of extending to the members of the North Carolina hospital Association and all others connected as indicated above with the sixty-five training schools in North Carolina a hearty invitation to attend this meeting.

It is an important item in hospital and training school development and we need the presence and assistance of all who are concerned in this work.

EDITH M. REDWINE, R.N.
President North Carolina League Nursing Education.

HOSPITALS AND BUSINESS.

Business management, earning capacity, safe margin of profit over cost, giving people with money to spend a chance to spend their money, are all factors just as necessary in a hospital as in a modern hotel.

While the Province was in the pioneer stage, small hospitals could be and were kept open on a combined business, charity, deficit met by government, and civic contribution basis. Every year the making of the balance sheet brought appeals to Government and city; in response the hospital would be lifted over the bumps and started on another year of financial uncertainties.

Those days are gone. The enormous costs and outlays of modern hospitals cannot be met by casual financing. There must be a complete reorganization. Business principles must be supreme in hospital management.

Instead of semi-charitable institutions throughout, the hospitals must be reorganized along the lines of first-class hotels, with the adjunct of semi-private wards and regular wards in which care and treatment can be given those whose means are insufficient to pay the charges.

The expenses of these charitable adjuncts can be accurately estimated, and government and civic grants expended for their upkeep.

The city cannot afford to lose money on cases originating outside of Vancouver. These must pay their own way or the Government must pay for them. But what both the city and Government can refuse to subscribe to, is a one to ten-dollar per day service on which the hospital only collects half. Super-service, whether for room, food or medicine, can and will be paid for as soon as people are educated to the fact that they can no longer sponge on the hospital.

The hospitals themselves have fallen ill; the remedy is business. Selling at or below costs means bankruptcy. Hospitals as at present designed and managed, secure only the unprofitable parts of the business, just the same as if the largest of city hotels should try to sell accommodation on the methods and prices of a country inn. Inefficiency and bankruptcy are the certain results.

Getting the money will have to be combined with curing the sick, in order to keep the hospitals going.—Vancouver (B. C.) Sun.

Transactions of the Meeting of the Ex-Presidents Society of the Tri-State Medical Association, February 16, 1921.

It was suggested by Dr. Stuart McGuire at a dinner given by him to the former presidents of the Tri-State Medical Association, that the ex-presidents of this body band themselves together as a club that they may be brought more closely together socially and professionally.

The following ex-presidents were present: Dr. Stuart McGuire, Richmond, Va.; Dr. Jas. H. McIntosh, Columbia, S. C.; Dr. Le Grand Guerry, Columbia, S. C.; Dr. J. A. White, Richmond, Va.; Dr. Jno. N. Upshur, Richmond, Va.; Dr. Albert Anderson, Raleigh, N. C.; Dr. J. P. Munroe, Charlotte, N. C.; Dr. A. E. Baker, Charleston, S. C.; Dr. J. Allison Hodges, Richmond, Va.; Dr. R. E. Hughes, Laurens, S. C.; Dr. Southgate Leigh, Norfolk, Va.; Dr. J. Howell Way, Waynesville, N. C.; Dr. A. C. Bryan, Richmond, Va.

It was moved by Dr. Upshur and seconded by Dr. Leigh that Dr. Stuart McGuire be made first president of this body. Motion carried.

It was likewise moved by Dr. Upshur and seconded by Dr. Baker that Dr. Bryan be made secretary of the society. Motion carried.

It was moved by Dr. Hodges and seconded by Dr. Munroe that at each annual meeting of the Tri-State Medical Association the ex-presidents of this society in the state in which the meeting is held shall give a dinner to the ex-presidents of the society. Motion unanimously and vociferously carried.

A photograph was taken of the members of the society, which is to appear in the transactions. All of the above members were present except Dr. McIntosh.

There being no further business the meeting adjourned.

R. C. BRYAN, Secretary.

Gynecology and Obstetrics

Robt. E. Seibels, M. D., Department Editor

Version During Labor.

Certain conditions must be present to make version a safe operation and we believe where the element of danger is present more than the usual degree, the mother had better be delivered by embryotomy or craniotomy. One has to see but one patient die of hemorrhage and infection to become very much impressed with how very unsafe a version may be.

For the combined or bipolar version, popularized by Baxter Hicks, the liquor amnii must be present or only recently drained away, the uterus and abdominal wall not in tonic contraction and the cervix sufficiently dilated to admit two fingers.

In the method of internal version the whole hand is passed into the uterine cavity, and since we usually change to a breach this is often meant when a podalic version is referred to. The same conditions must be present as for the Baxter Hicks method.

In both these mechanisms extreme care must be taken to prevent the introduction of infectious material into the uterus. The general preparation must be most careful and if she has been draped and other manipulations made beforehand, it is better to start fresh with clean towels, gloves and gown and the vulva and thighs carefully scrubbed again. As a portion of the operator's wrist and forearm will be introduced into the canal, he should be scrubbed above the elbows and must exercise great precaution not to become unsterile.

The prophylaxis of uterine rupture requires technical skill in the easiest case. The lower uterine segment thins out with the onset of labor and grows thinner as labor goes on. If the head is firmly engaged in the brim, or the uterus is firmly contracted on an impacted transverse, to attempt a version is to invite disaster—rupture of the uterus is the most likely outcome of such a procedure. The woman should be under fairly deep anaesthesia so that she may be relaxed—and if she should contract her abdominal muscles or uterus contract, the operator must stop at once and await relaxation. Again, he must be on his guard lest the baby's foot be thrust through the uterine wall —one has to go through this organ but one time to appreciate how easy it is to do.

We believe that it is exceedingly rare, nowadays, when an obstetrician can with justice plead inability to get proper surroundings as an excuse for his "taking a chance." The patient with an impacted shoulder—ten miles from town—no funds—no sterile goods—no assistant. What shall the doctor do? One of two things—take her to a hospital is the best or else send for help, meanwhile getting things on the stove to sterilize and give the patient an occasional shot of ether or morphine to quiet her pains. She can stand the transportation or the wait for requirements to do a craniotomy much better than hemorrhage or infection or both. The lack of proper instruments and surroundings is no excuse for poor obstetrics.

Urology

A. J. Crowell, M. D., Department Editor

Ulcer of the Bladder.

H. A. Fowler, Washington, D. C. (Journal A. M. A., Nov. 27, 1920), has seen three cases of the Hunner type of ulcer of the bladder. Permanent relief was obtained by excision of the ulcer bearing area. The bladder was closed tight, a small cigaret drain was placed in the space of Retzius, and the bladder was drained by a self-retaining catheter. The bladder was irrigated daily with a 1: 10,000 silver nitrate solution. The result in both cases has been extremely gratifying and strikingly similar to the results already reported.

Retroperitoneal Perirenal Lipomas.

One case is recorded by Walter R. Holmes, Atlanta, Ga. (Journal A. M. A., Oct. 16, 1920). Retroperitoneal lipomas form a group of rare abdominal tumors, arising from the fat which normally surrounds the kidneys. The etiology of these tumors is unknown. They occur most frequently between the ages of

40 and 50. In the reported cases, 70 per cent occurred in women. The symptoms of perirenal lipomas are those resulting from pressure of the tumor. Because of their silent beginning, the tumors have usually attained enormous size when first seen by the surgeon. The diagnosis is difficult and is made usually at necropsy or at the time of operation. The treatment is surgical. The intimate relationship of the tumor to important structures makes their removal difficult, with a primary mortality of 20 per cent in the cases reported in the literature. The prognosis is grave. Recurrences after operation are frequent. These recurrent tumors have a tendency to undergo malignant degeneration.

Positive Wassermann in Non-Syphilitic Patients After Intravenous Therapy.

Albert Strickler, Philadelphia, and his co-workers advise (Journal A. M. A., Nov. 27, 1920), that a positive complement fixation test for syphilis obtained with the serum of a patient treated with arsphenamin for some non-syphilitic malady or some obscure disease should be interpreted with great caution and considerable reservation. In view of the fact that there are a number of affections, such as anemia, malaria, recurrent fever, pemphigus, psoriasis and septicemia, in which arsphenamin is recommended as a method of treatment, and because arsphenamin is employed in the treatment of obscure diseases and affections difficult to influence, as a sort of last resort, it becomes the duty of the clinician and the serologist not to be over hasty or too dogmatic in pronouncing such an individual definitely syphilitic. The authors believe that at times too much arsphenamin is administered in the treatment of syphilis and that this remedy may be responsible for the persistence of a positive Wassermann reaction.

Movable Kidney With Unilateral Nephritis—A Report of Two Cases Cured by Operation.

The authors recognize four degrees of renal mobility: (1) that in which only the lower pole is perceptible to the touch—frequently referred to as "palpable kidney"; (2) that in which the greater part of the body, but not the upper pole, may be palpated; (3) that in which, besides the findings of the second variety, the upper pole may be distinctly outlined; and (4) that in which the entire kidney is palpable and may be freely displaced in the abdomen or the pelvis—the so-called "floating kidney."

In the first case reported the postoperative course was comparatively smooth. The patient remained in bed for one month, the urine at this time showing a few casts but no albumin or other abnormal constituents. One month later the patient was in good health and the urine was normal.

In the second case absolute bed rest for six weeks was insisted upon. During this period the urine became normal and the general condition improved decidedly. Three months later the patient was comparatively comfortable and the urine remained normal.

In commenting on these cases the authors state that while mere mobility of the kidney may be a negligible condition, it may also be the cause of serious organic trouble; that not every neurotic with a movable kidney is to be passed by or treated merely for his neurosis; and above all else, that every patient with a movable kidney and urine indicating nephritis should be subjected to ureteral catheterization for the separate study of the function and excretion of each kidney. Chronic unilateral nephritis due to mobility of the kidney is curable. — Cadwallader, J. M., and Brown, A. A., J. Am. M. Ass., 1920, lxxv, 1252.

Gummatous Epididymitis and Gummatous Osteoperiostitis of the Humerus.

The authors state that although syphilis may attack any part of the body, certain regions, as is well known, are relatively less often affected than others. Among these is the epididymis. On account of the comparative rarity of the condition and because of certain difficulties in the diagnosis, they record in this article a case of luetic epididymitis which recently came under their observation.

The patient was a man 61 years of age who complained of pains and swelling in the upper part of the right arm and a non-painful swelling in the right half of the scrotum. The chief positive finding in addition to these was a positive Wassermann reaction of the blood,

The condition was diagnosed as lues although the surgeon believed it to be tuberculosis. Arsphenamin treatment relieved the pain at once, and after six weeks the swelling in the arm and epididymis disappeared entirely.

An interesting feature of this case was the fact that the patient had had all his teeth extracted as possible sources of infection for what was regarded at first as neuritis.

The article is concluded with the statement that the case shows the importance of a general diagnostic survey of the body as a whole and the advisability of trying thorough antileutic treatment before operating upon a testicle or epididymis suspected to be affected by tuberculosis or a neoplasm.—Barker, L. F., and Ward, J. A., South. M. J., 1920, xiii, 794.

MENTAL AND NERVOUS.

Jas. K. Hall, M. D., Dept. Editor.

At the recent meeting in Spartanburg of the Tri-State Medical Association the paper of Dr. Lewellys F Barker, read before the full session of the Association, at which many laymen also were present, attracted deserved attention for reasons more than one. In addressing the thought of his auditors to a philosophic consideration of blood pressure well above the so-called normal the very title of the paper of itself was thought-arresting—"On the Management of Patients Manifesting High Blood Pressure." It is noticed instantly that he did not presume to speak of treating the abnormal pressure, which in most cases must come in response to a call, and which must be necessary to the continued life of the individual; but he stressed the fact that the great need in such conditions is rather the comfortable adjustment of the individual to the phenomenon. His candor in the presence of a lay audience was most refreshing. When a well-known diagnostician and medical author stands before an audience of non-medical men and women and confesses boldly that the cause of a condition so widespread as arterial hypertension is generally not known, and that attempts at specific treatment of the situation are often futile or worse, it means of course that secrecy and mysticism are disappearing from the practice of medicine, and that the public is being dealt with intelligently and justly. And it may mean eventually, of course, the saving of some human teeth, outgrowths now regarded as valueless, almost, as the German mark.

The group of those individuals is still small who would have the temerity to attempt to define that human quality referred to by the term mind, but all of us are immensely interested in this manifestation of life through the medium of matter, and almost as much so in its supposed influence over matter. These latter manifestations of this human attribute served as the basis of an excedeingly interesting address at this same public session of the Tri-State by Dr. William A. White, who has been for several years the superintendent of St. Elizabeth's Hospital in Washington. This institution was formerly known as the Government Insane Asylum. The title of Dr. White's address was "Some Suggestions Which Psychology Has to Offer to the Understanding of Chronic Diseases." Most of us experience little difficulty in realizing that an emotional upheaval may release a flood of lachrymal fluid, or that fright may produce momentary motor palsy, in addition to rapid heart-action and disturbed breathing, but the mere suggestion that a continuation for a long period of time of an emotional storm might actually lead to physical change in the organism was rather too large or too new a bolus for most of the doctors to attempt to swallow. It was unpalatable After all, we are materialistic in our conception of life and of disease, mechanical in our practice of medicine, and for that reason pseudo-medical practitioners in many places flourish like the green bay tree. Here they may be Christian Scientists, there chiropractors, and yonder osteopaths, but they do this work poorly that better medical men than we are could do well. If one emotional state may exhibit itself in one individual in dancing; another sort of emotional flurry in another human being in rage; why may not a less well-understood emotional disorder show itself through the medium of the physical being in a manner that simulates the symptoms of physical disease? Osler, we remember, spoke of an appendiceal hypochondriasis. Dr. White's remarks when spoken

outside an assemblage of psycho-analyses often encounter disapproval, but he is always thought-provoking, and disturbing to our stereotyped way of thinking. Medical progress is impossible in the presence of medical complacency.

In the American Journal of the Medical Sciences for February of this year David Riesman talks about Acute Psychoses arising during the course of heart disease. He notes that the average text-book pays scant attention to this deplorable association of mental abnormality with physical disease, but he refers to Head's splendid article on the same subject in "Brain" in 1901. Riesman writes mostly from personal experiences with patients. The more important morbid mental manifestations associated with cardiac disorder he groups as follows: Hallucinations. The hallucinosis involves usually sight or hearing. Not infrequently this phenomenon is overlooked, owing to its mild form. Confusion is not infrequently observed. Disorientation for time and place may be temporarily complete. Excitation and exhilaration are not so common. Occasionally this condition is followed by apathy or positive stupor. Mania of startling suddenness had to be dealt with in one patient—a physician. It was followed by exhaustion which resulted in death.

Delusional states of various kinds were not infrequently under observation. In one instance at least ideas of persecution were dominant for several days. During the most labored breathing in the Cheyne-Stokes situation there is frequently disordered mental activity.

As responsible for the mental disturbances Riesman thinks of disordered cerebral circulation, either general or localized; interference by toxaemia or otherwise of the involved sensory end-organs; he stresses the possibility of the effect of acidosis; and he invites particular attention to consideration of the probability of cerebral poisoning by certain drugs, especially digitalis. This unusual condition may result, in his opinion, either from idiosyncrasy or from overdosage. In every case of mental disorder Riesman concludes that careful investigation should be made of the heart condition.

The writer, by the way, during the days of his internship in Riesman's own city of Philadelphia, knew of a cardiac patient who suddenly shot out of a hospital ward window to his death on the pavement, either as the result of suicidal intent or as the purposeless activity of an unsuspected maniacal outburst.

PEDIATRICS.

Yates Faison, M. D., Department Editor.

Epidemic Acid Intoxication, Acidosis, Parke's Syndrome.

In the November, 1920, Archives of Pediatrics, B. K. Rachford, M. D., Professor of Pediatrics, Medical Department of the University of Cincinnati, gives a very interesting paper on Epidemic Acid Intoxication or Acidosis—Parke's syndrome.

He deals mostly with the treatment and makes no reference to the etiology of this condition except in a foot-note he states that in previous papers he has suggested that the possible etiology of this symptom group might be due: (1) To the loss of alkalies in the blood and tissues; (2) To the poisonous action produced by the bases which carried the acids through the blood to their excretion by the kidneys; (3) To the direct poisonous action of the acids themselves And in later papers discussed the possibility of the symptom group being produced by a perverted liver function caused by the acidosis.

He thinks that all pediatricians at the present time believe there is rather a definite and dangerous syndrome characterized by intoxication with organic acids, which occurs not infrequently, especially during the winter months, in epidemic form, and which is most commonly seen between the ages of one and three years—also that most writers believe that this syndrome differs materially, in its etiology and treatment, from the so-called cases of acidosis of the recurrent vomiting type, which occur in older children, as well as from the so-called cases of acidosis which occur so frequently in acute infectious diseases, diabetes, and acute gastro-intestinal disorders. Severe diarrheas, intestinal intoxications, and gastric disturbances, which may produce acetone and diacetic acid in the urine, are pre-eminently summer complaints,

while epidemic acid intoxication is comparatively infrequent during the summer months.

He describes this syndrome commonly beginning with anorexia, nausea, and vomiting. The vomiting and extreme nausea do not, however, commonly persist for more than one or two days, and not infrequently disappear within 12 or 24 hours. At the same time, the acetone odor in the breath is noted and the acetone bodies appear in the urine. The temperature is commonly above normal, running as high as 105°-106°, but on the other hand may remain normal or sub-normal even in the fatal cases. In the majority of the cases there is a rather marked intestinal fermentation manifesting itself in diarrhea, the bowel discharges being putrid in odor and showing other evidences of putrid fermentation. In some cases there was constipation, but in these cases also the movements, produced by laxatives, showed the odor and other signs of putrid fermentation. He believes that the gastro intestinal fermentation is only a symptom of this syndrome rather than the essential factor in producing the acidosis—a rather fair percentage of these cases occurred in perfectly nourished, breast fed infants under one year of age, and states that if epidemic acid intoxication was simply one of the symptom groups of intestinal intoxication, it would be much more prevalent during the summer months, and would rarely occur in breast-fed infants.

Labored and rapid breathing, quite out of proportion to the elevation of temperature, occurred in the majority of cases.

As the syndrome progresses, the child becomes more or less apathetic and lethargic, the stupor gradually increases, until the child fails to react to its surroundings and loses consciousness, dying in a profound coma. In many cases he found a marked rigidity with tenderness to retraction of the abdominal muscles, and not infrequently, a marked rigidity and tenderness in the right hypochondrium in the region of the liver, and the liver enlarged to one or two inches below the costal border. As to treatment, he registers his opinion, based upon clinical observations, that the generally accepted opinion that large doses of bicarbonate of soda in these cases as the all important method of treatment is fallacious—that not only is bicarbonate of soda in large doses of no value, but also may have a deleterious effect, even to bringing about a fatal result. In all of the fatal cases which he saw, large doses of bicarbonate of soda had been used, and in some of the cases the urine became alkaline under the soda treatment, but the diacetic acid and acetone in the urine persisted. No claim is made that small doses of bicarbonate of soda are dangerous, but he is unconvinced that they are of any benefit, and so has discarded their use and is convinced that he gets better results without the soda bicarbonate than with it. His adopted line of treatment is as follows:

Cleaning of the intestinal canal as soon as possible by either colon irrigations with physiological salt solution, or, as soon as the stomach can retain medication, castor oil, milk of magnesia in large doses, or some other saline laxative should be given, and repeated during the treatment as often as necessary.

Physiological salt solution given hypodermically or intravenously in severe cases where the exhaustion is great and where fluids are not retained by the stomach. Following the cathartic medication, Bulgarian bacillus in some form is given and continued in fair sized doses until the child is convalescent.

The dietetic treatment is all important.

In beginning the treatment, it is important to let the stomach rest, giving glucose or dextrose solution by the rectum, and in necessary cases giving these solutions hypodermically or intravenously. By the second day in the great majority of cases it will be found possible to give certain foods and medication by mouth. Then the dextrose solution is given by mouth, followed by small quantities of the thick malt extracts, Nestle's food, or malted milk, and as soon as possible, cereals, such as strained oatmeal or barley should be added to the diet. Cane sugar may be used in sweetening the cereals. Orange juice should be given as soon as possible, and if retained, should be given in large quantities, diluted with sweetened water.

It is important that milk, fats and albuminous foods in all forms should be omitted from the diet until the child is safely convalescent.

This paper is of especial interest, as just such a group of cases occurred in and around Charlotte this winter—the cases seen here were very similar in symptomology and responded very nicely to a treatment somewhat similar to the one here described except the lactic acid culture was not used.

Orthopædics

Alonzo Myers, M.D., Dept. Editor.

Congenital Syphilitic Epiphysitis in Adolescence.

In the case reported by Gaenslen and Thalhimer a diagnosis of infantile paralysis was made and the usual measures instituted for restoration of muscle power. Gradual improvement followed without other treatment, but the patient's general condition remained rather below par. One year later the patient returned with pain in the left hip and slight general indisposition. Examination showed tenderness over the left trochanter, slight limitation of motion in flexion, rotation inward and outward, other hip motions remaining normal. The temperature ranged between 99 and 100 F. Examination was otherwise entirely negative. Roentgenograms showed the trochanter to be rather flattened, with diffuse areas of rarefaction scattered throughout it and the adjacent portion of the femoral shaft. The epiphyseal line could not be made out, though it was still visible on the sound side. There was slight evidence of periosteal thickening of the shaft below the trochanter. The nature of the condition was entirely obscure, but tuberculosis or low grade pyogenic infection was at once excluded. Submission of microscopic slides to two pathologists of national reputation did not help to make the diagnosis in this case. The points which did assist in finally discovering the nature of the lesion were the periosteal thickening along the shaft of the femur, the recurrence of symptoms in three more or less definite attacks during the fifteen months the patient was under observation, the restlessness at night in spite of adequate fixation, and lastly the prompt and complete disappearance of pain on placing patient on anti-syphilitic treatment.

Treatment of Fracture of Femur.

Speed analyses 526 cases of fracture of the femur, observed in the Cook County Hospital and endeavors to outline a standard method of treatment, one which will make for better results. To overcome objections which can now be raised, Speed suggests that every patient with fracture of the femur should be directed to a hospital for roentgenray examination, correct treatment by any of the accepted methods, and after-treatment when cured. This includes fitting the patient with a walking caliper as soon as he is ambulatory or on his discharge from the hospital. Because fracture tables offer good means of securing reduction and an easy method of external splinting by plaster of Paris, every hospital receiving cases of fracture of the femur should possess a fracture of orthopedic table. Careful records should be kept in accordance with a fracture record sheet such as has been compiled by the American Surgical Association, so that a large number of average results can be grouped, that treatment looking toward the ideal may be worked out.

State Medicine

L. B. McBrayer, M. D., Department Editor

N. C. State Sanitary Privy Law Sustained in Superior Court.

For the first time since the North Carolina Legislature in 1919 enacted the sanitary privy law requiring the construction and maintenance of a sanitary privy by all citizens of the state residing within 300 yards of another human domicile, the state board of health has had to prosecute a citizen in the higher state court. Quite a number of indictments in every section of the state has been made by the state board during the past two years, but in every previous instance the erring citizen promptly accpeted the judgment of magistrate's court, paid his fine, and constructed his sanitary toilet without further delay. Last month an intelligent farmer living near Waynesville, after indictment by the official acting for the state board of health, and conviction with imposition of nominal fine, appealed to the superior court, where,

after a trial by jury and the introduction of considerable testimony, a verdict of guilty was quickly found and the judgment of the magistrate's court affirmed.

Smallpox Vaccination in Public Institutions.

After more than a hundred years of vaccination against smallpox it appears there is a positive danger of neglect of this vital procedure by some public institutions in this and other states. The recent occurrence of more than fifty cases of smallpox in one of the state hospitals for the insane in a Southern State, and the more recent outbreak of smallpox in the county convict camp of one of the most populous counties of the same state serves to direct attention at this time to the importance of vaccinating every employe and inmate of state, county, and municipal institutions such as jails, county homes, convict camps, insane hospitals, etc. That so well known a preventive of disease is neglected by those in authority is a matter little short of disgrace to those responsible. The recent experiences of so large a number of our citizens in the federal services of army, navy, etc., where everybody was regularly and systematically vaccinated ought to have so impressed this lesson in disease prevention on all civilian doctors that it would now be the established rule, rather than, as suggested to us, the exception, to vaccinate immediately following admission, all persons committed to public institutions. Later anti-typhoid and para-typhoid vaccination should be given. This rule should be applied to all employees as well as those interned in public institutions. With equal force the arguments for the extension of the practice to all educational institutions applies. Physicians connected in official capacity with any governmental institutions should promptly avail themselves of every opportunity to protect with vaccination those under their professional supervision; and the failure to do so regularly and systematically should mark them as professionally incompetent to hold such positions in this day of enlightened sanitation and disease prevention.

Hospitals and Sanatoriums

John Q. Myers, M. D., Department Editor

Southern Hospital Association Organized.

On November 15, 1920, there was a meeting held to organize the Southern Hospital Association, which will be an auxiliary of the Southern Medical Association. The session was called at Louisville, Ky., with Dr. W. P. Harbin of Rome, Ga., acting as president. The question of organizing the association as an auxiliary, to function as a section of the medical association, was discussed, and it was the unanimous opinion of those present that there is a distinct need for a hospital association. The acting president was instructed to name a committee on constitution, by-laws, and permanent organization, to report at the next meeting one year hence. The temporary organization now functioning will continue until that time. The association then proceeded with a symposium on group medicine; papers were read by Dr. Stewart R. Roberts, Atlanta, Ga.; Dr. Benj. B. Steedly, Spartanburg, S. C., and Dr. M. B. Stokes, Houston, Texas. The question was then discussed by several other doctors. After a paper by Dr. Tom A. Williams, Washington, D. C., on the management of certain types of nervous cases in general hospitals, the election of officers was held. Dr. W. P. Harbin, Rome, Ga., was elected president, Dr. Beverly R. Tucker, Richmond, Va., vice-president, and Dr. Paul V. Anderson, Richmond, Va., secretary.

American Sanatorium Association Meets.

The American Sanatorium Association held its sixteenth mid-winter meeting at the Monroe County Sanatorium, Rochester, N. Y., on December 11, 1920. Approximately seventy-five members from all parts of the country attended. The scientific discussion was on the present day status of the early diagnosis of tuberculosis, various phases being presented by distinguished speakers. This was followed by general discussion. The matters considered were nation wide follow-up by mail of ex-sanatorium patients, with the co-opera-

tion of the national association; an extending into the homes of post-sanatorium treatment; and the modification of the present classification of pulmonary tuberculosis by including X-ray findings.

American Conference on Hospital Service to Meet Early in March.

The Council on Medical Education and Hospitals, the Council on Health and Public Instruction of the American Medical Association, the Association of State Licensing Boards, the Association of American Medical Colleges, and the American Conference on Hospital Service will meet in conference in Chicago from March 7 to 10. Wednesday afternoon, March 9, will probably be given over to the American Conference on Hospital Service.

Cutting Down Waste Material.

A booklet used during the war entitled, "Army Food—Kitchen Products and By-Products," contained so many pointers in kitchen economy for hospital executives that we are reprinting herewith certain extracts.

"Fats for cooking. Suet should be used for the best cooking purposes. Its most economical use is raw in suet pudding; but it can also be turned into drippings.

Excess fat from the carcass (butcher's fat)should be cut into small pieces or put through a meat grinder, rendered and clarified. It may be issued instead of butter.

Surplus fat removed before cooking (trimmings) should be rendered and clarified, for use in making cakes and biscuits.

Cracklings, the fibulous residue of rendered raw fat, should be boiled up with water, skimmed, and used in first-class cooking.

Skimmings, the grease skimmed off the surface of stews, stockpots, etc., should be clarified. If discolored it should be broken up, put into fresh water and reclarified. When clear it can be used for first-class cooking; if discolored and flavored, it is useful as second-class best brown drippings for frying.

Bacon fat left after frying bacon should be clarified and used for second-class brown drippings for frying. Fat lost in process of cooking when clarified makes excellent gravy.

One bullock yields an averge of seventy to eighty pounds of bones, and of waste fat 100 to 120 pounds. One sheep yields eleven to fifteen pounds of bones and twenty to twenty-eight pounds of fat."

Getting 100 Per cent Service From Your Lighting System.

During the winter months, the lighting expense of the institution is naturally heavy, and hospital superintendents should take every measure to guard against undue light consumption, and to see that the greatest possible lighting efficiency is secured.

It is common knowledge that incandescent lamps deteriorate, and as a result lighting efficiency is greatly reduced, and the current consumption is increased. This is particularly true of carbon lights, which use much greater current when old than when new. This deterioration can, as a rule, be easily detected by the eye without photometric apparatus, as the light has a yellowish cast, the surface of the globe becomes blackened or carries a dark deposit, while in some instances a deposit also occurs on the outside of the lamp bulb.

The manufacturers of the Mazda lamp claim an average life of one thousand hours' burning, and state that at the end of this period the lamp should be discarded, if the greatest possible economy and efficiency is to be secured.

Another way in which lighting efficiency can be furthered is to inspect your lighting system carefully and see if lamps of proper size are being used. It will frequently be found that a lower candle power will give ample light for certain locations. In other words, the candle power of the electric light should be governed entirely by the conditions surrounding its use.

Another thing, be sure that your lighting fixtures are clean. This is no reflection on your housekeeper, because even in fixtures that appear clean there is frequently an accumulation of dust that greatly impairs the lighting efficiency. All lamps and reflectors should be regularly washed and cleaned. In the ordinary direct lighting reflector there is little opportunity for dirt to gather, and the lamp bulb will be the primary cause of light loss. In the case of the inverted unit, however, a thin layer of dust soon settles on the entire

reflecting surface, as well as on the lamp, and this will reduce the lighting efficiency appreciably in a very short time.

Another cause for faulty illumination is the condition of walls and ceilings. This should be most carefully watched in rooms requiring brilliant illumination such as operating rooms, laboratories, etc. The paint and enamel gradually lose reflecting power, and many deficiencies in the lighting system may be due in part to the condition of the walls and ceiling.

CLINICAL AND PROFESSIONAL NOTES

J. Allison Hodges, M.D.

Pituitary Headaches.

Clinically, headache is not a disease, but a symptom of disease. It is the most common of all nervous symptoms, and its significance depends on its basic cause.

There are more than a score of different kinds of headaches, and it is always important to distinguish between functional disturbance on the one hand and organic intracranial processes on the other, which may be causative agents.

Pituitary headaches have been little discussed in medical literature or the periodicals, but are important, because their prognosis is grave unless early recognized, and properly classified.

Briefly, their clinical characteristics are as follows:

Frequency—Pituitary headaches are not as frequent as those of toxic or migrainous origin.

Location—Pituitary headaches are mainly bitemporal, but may be frontal, or fronto-occipital.

Character of Pain—Pituitary headaches are constrictive, squeezing and persistent.

Duration—Pituitary headaches have no periodicity, the average patient suffering more or less all the time.

Sex Occurrence—Pituitary headaches occur oftener in women than in men in the proportion of about three to one, though numerically speaking, they are not very frequent.

Constitutional Type—Pituitary headaches have no heredity and occur invariably in patients with Pituitary dysfunction and the classical Pituitary signs, such as abnormalities in body hair, too much or too little, irregularities of the teeth, certain changes in bodily bone development, increased sugar tolerance and other disturbances of nutrition, such as adiposity and changes in secondary sexual characters, forming the Frolich syndrome.

Associated Symptoms — Pituitary headaches have few associated symptoms, except those of an irritative character, resulting generally from hyperplasia of the gland and occasionally accompanied by nausea, vertigo and vomiting, but rarely if ever showing choked disc or visual aurae, though in the case of Pituitary tumor, there may be associated permanent bitemporal hemianopia.

The body temperature of individuals suffering with this form of headache is usually below the normal and the systolic blood pressure is uniformly low.

Pathology—Pituitary headaches are not the result of functional disturbances but are due to anatomical abnormalities which, in part, interfere with the proper functionation of the Pituitary gland, this type of headache being due to an altered secretion of the pituitary, which causes swelling and consequent permanent enlargement of the gland. Whether this enlargement is caused by some compensatory demand upon this gland, because of dysfunction of the thyroid or suprarenal glands, or the insufficiency of the adrenals, is not definitely known, but the fact remains that the Pituitary gland in many cases does enlarge and because of its anatomical position and consequent constriction in a bony enclosure, especially when the clinoid processes are abnormal, or the fossa is limited in size and sufficient space is not allowed except laterally for this new growth to expand; consequently, there must arise pressure symptoms and resultant localized pain.

Therapeutic Response — Pituitary headaches, in properly selected patients, are uniformly responsive to glandular therapy in proper dosage, usually two grains of the Pituitary extract, administered four hours after meals and continued over a long period and increased or decreased according to developments in the individual case.

Summary—Pituitary headaches are the result, physiological in part, and in part pathological, of enlargement of the

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Pituitary gland, situated, as it is, in bony and unyielding walls which do not allow symmetrical development and consequently pressure symptoms are produced. They are never paroxysmal, but are localized and persistent in type, and occur in patients showing the clinical dyspituitary disorders and the prognosis is favorable, if the pressure symptoms of headache, vertigo and vomiting are treated early by proper glandular feeding.

The above synopsis of the clinical symptomatology of a "symptom" is offered for its suggestive purposes, and with the hope of arousing scientific interest in the earlier diagnoses of Pituitary headaches by the profession.

Nurses Corner

Edith M. Redwine, R. N., Dept. Editor

District News of the North Carolina State Nurses' Association.

Distrito No. 1—Asheville.

At the January meeting the following officers were elected: Miss Mary P. Laxton, president; Mrs. C. L. Chalmers, first vice-president; Mrs. I. A. Hanna, second vice-president; Miss Ella Case, treasurer; Miss Athalia Lord, secretary.

Board of Directors—Miss Belle Campbell for three years, Miss Serena Alexander, three years; Miss Sadie Vaughn, three years, and Miss Nell Luther, one year.

A. LORD, R.N., Secretary.

District No. 4—Greensboro.

Our annual meeting was held January 5, 1921, and the reports for the past year were very encouraging. We have 63 paid-up members and have excellent attendance at our meetings the first Wednesday of each month. New officers were elected as follows: President, Miss Gilbert Muse, High Point; first vice-president, Miss Flora Matthews, Greensboro; second vice-president, Miss Margaret Neville, Burlington; secretary, Miss Cora Beam, Greensboro; treasurer, Miss Laura Clark, Greensboro. Directors, Miss Vera Johnson, High Point; Miss Jessie McLean and Mrs. Dorothy Hayden, Greensboro.

Our second meeting of the year, held February 1, was splendidly attended. After the business session Miss Simpson, of the State Board of Health, gave a talk on her work in the State which brought about a very interesting discussion among the nurses. Second on the program, Mr. Haynes, of the Haynes Funeral Home, demonstrated a pulmotor.

Refreshments were served by Mrs. Lamb and Miss McLean.

The March meeting will be held at the Y. W. C. A. hut, North Carolina Colege for Women, with Miss Clark and Miss Bevan as hostesses.

JESSIE McLEAN, R.N.

District No. 8—Wilson.

District No. 8, Wilson, held a most interesting and instructive meeting at Tarboro in January. Three splendid papers were read by Misses Rose, Midgett and Moncur ewhich brought forth interesting discussion from the nurses.

Our next meeting will be held at Rocky Mount in March.

ANNIE E. MORRIS, R.N.,
Secretary.

Notice.

The Annual Convention of the National League of Nursing Education and the National Organization of Public Health Nursing will be held in Kansas City, Mo., April 11-15, inclusive. Nurses and others wishing to attend please notify Miss R. Inde Albaugh, Headquarters National Nursing Association, 156 Fifth Avenue, New York City, as early as possible in order to secure the advantages of reduced rates if such can be obtained.

The Work of the Public Health Nurse in North Carolina.

Contributed by Department of Nursing, Southern Division, American Red Cross.

There is no one element which is more universally regarded as an aid to public health than the work of the public health nurse who carries her message of sanitation directly into the homes of the people and who is able through her personal contact with individuals and with conditions to illustrate and emphasize her lessons regarding the value and importance of preventive measures to insure health.

In the State of North Carolina at present there exists a corps of public health nurses who have been recruited from many sources and who are working in connection with the State and County Boards of Health and with Red Cross chapters.

These nurses are doing particularly valuable work in rural communities where hospital accommodations are limited or non-existant and where the people are not reached by insurance or industrial nurses and are not within the radius of territory covered by cities organized for public health.

The value of a public health nursing service in rural communities has been amply demonstrated from time to time and the object of this department is merely to chronicle the various achievements of individual nurses in the communities they serve, for these achievements will, of themselves, indicate the breadth of the service undertaken and the scope of activities for further health work on the part of the public health nurse.

Andrews, N. C., Has Typical Health Center.

Miss Ida B. Wilson, the public health nurse at this place, records that for the month of January she paid a total of 132 visits, 82 of which were nursing visits, five were infant welfare visits, six pre-natal and eight visits made to the homes of school children, while 17 were listed as "friendly" visits and might well have been termed "educational" in the highest sense of the term because in such visits the nurse covers health subjects under a guise of social suggestion and kindly counsel.

Miss Wilson presides over a typical Red Cross health center at Andrews and the people have been interested visitors to whom she has explained the uses and opportunities offered by a central point from which health information may be secured. The nurse finds in the health center a tangible evidence of what she strives to impress by words and actions.

The Beaufort County Nurse Works With the Schools.

In Beaufort County, the public health nurse, Miss Flora Wakefield, has found it imperative to spend much time with the county schools and during the month of January, 13 of these schools were visited with a view to aiding in the inspection of the 700 pupils, while 18 talks were given to the pupils in classes and 13 visits were made to the homes of pupils in order to follow up the health work suggested for individual cases.

But this intensvie health work in the schools was not permitted to interfere with the regular routine work of the nurse who made a total of 74 visits throughout the town and county, this number including infant welfare and pre-natal visits, tuberculosis visits and

the visits in connection with the school work already mentioned.

The Burke County Red Cross Nurse Works With Midwives.

The unregistered midwife is a menace to the lives of mothers and infants and when the Red Cross nurse in Burke County reports that she finds 20 such midwives she has certainly unearth a danger spot in the health of the county which when removed must prove of inestimable benefit to the people. Miss Lou E. London makes this a part of her work for the month of January and after conferences with the midwives and classes for them she sends in application for registration for three and continues her educational services for the remainder.

One hundred and forty-three visits covering the various nursing activities incident to the work of a public health nurse are also made by Miss London and the health of the people of Burke County are thus safeguarded in a most efficient manner.

Health Education Through Popular Talks.

At Newton, N. C., Mrs. Alice T. Bassett, the public health nurse for Catawba County, teaches health through public talks, reaching during the month of January some 1,036 persons and extends her audiences indefinitely through a series of newspaper articles on popular health subjects. Mrs. Bassett reports that she also put on the health crusade for 500 school children and that she covered the full nursing program for the month, including attention given to 181 cases and a total of 99 visits paid.

(Continued in April issue.)

News Items

Mecklenburg County—At the regular meeting of the society March 1st, six names were proposed for membership—Drs. Matthews, Gage, Schull, Collins, Ware and Skinner.

For several months the present quarters of the society have been inadequate for comfort and new quarters are being sought.

The society is not only growing in numbers, for that can only be as new men move in, for all eligibles are already members, but the growth in enthusiasm is quite phenomenal, and all members are finding they cannot afford to allow any ordinary excuse to prevent their attendance.

At the March 1st bi-weekly meeting, Dr. Treloar Wearn, a native of Charlotte, but for the past two years at the Peter Brent Brigham Hospital in Boston, discussed in a splendid manner the recent studies at that institution of the use of Digitalis.

Dr. L. A. Crowell of Lincolnton reported a rather rare case of ovarian cyst, containing 1 gallon 11 ounces of fluid, in a negro child 4½ years old.

Dr. Oren Moore read a paper on Cul de Sac drainage and reported some bits of amusing experience which clearly proved it to be an operation that could be safely undertaken by any versatile doctor even in private homes with limited facilities.

Dr. T. C. Bost read a paper on Plastic Surgery which was freely illustrated by lantern slides and showed almost unbelievable results.

At a special called meeting of the society, March 5th, Dr. W. deB. MacNider of Chapel Hill presented a paper on nephritis showing results of his original research on kidney functions.

(We know you are interested in the doings of other county societies and we wish every secretary would display a little activity by reporting what your society is doing.—Editor).

Dr. John F. Bresnahan Assumes New Position.

Dr. John F. Bresnahan, who has been associated with Dr. John G. Bowman in the hospital standardization work of the American College of Surgeons during the past year and a half, has been appointed superintendent of the Bridgeport Hospital, Bridgeport, Conn. Dr. Bresnahan was for several years one of the assistant superintendents of the Massachusetts General Hospital. During the latter part of 1918 he was morale officer of the hospital at Camp Custer, and later was appointed morale officer of the entire camp. The Bridgeport Hospital is to be congratulated upon securing Dr. Bresnahan, who is a man of varied experience and wide knowledge of the hospital field.

Southern Medicine and Surgery

VOL. LXXXIII CHARLOTTE, N. C., APRIL, 1921. No4.

EXPLANATORY.

To the Members of the Tri-State Medical Association:

At the meeting of the twenty-third annual session of this Association in Spartanburg in February of this year a resolution was presented to the executive council suggesting that an effort be made to find out if the transactions might not be published in Southern Medicine and Surgery, the successor of the Charlotte Medical Journal. The resolution was adopted by the executive council, and was referred by that body to the Association in full assemblage. The vote of the Association indicated its desire to leave to the executive council entirely the matter of arranging for publication of the Association's transactions. Southern Medicine and Surgery indicated its willingness to publish the transactions in full in the twelve numbers of the journal from April to April. For this service the journal will be paid one dollar and a half for each member of the Association. These subscriptions will be paid for out of the treasury. This arrangement makes it possible for the membership to be supplied with the transactions for a reasonable outlay. The cost of placing the transactions in the usual book form in the hands of each member of the Association would amount to about four dollars per member.

If the present scheme calls forth membership approval the Association may indulge the hope of having a permanent official organ. The papers read at the Spartanburg meeting will make up a medical journal for which no editor need feel apologetic.

W. W. FENNELL, M.D., President.
JAS. K. HALL, M.D., Secretary-Treasurer.

MINUTES TWENTY-THIRD ANNUAL SESSION TRI-STATE MEDICAL ASSOCIATION OF THE CAROLINAS AND VIRGINIA.

Spartanburg, S. C., February 16-17, 1921.

First General Meeting.

The Association was called to order in the auditorium of Hotel Cleveland, at 10 o'clock a. m., February 16, 1921, by Dr. D. L. Smith, of Spartanburg, S. C.

Dr. D. L. Smith: Ladies and gentlemen, the Society will come to order. We will have Divine invocation by the Rev. A. D. P. Gilmour.

Invocation.

Address of Welcome on Behalf of the City of Spartanburg and the Medical Society of Spartanburg—Dr. H. R. Black, Spartanburg, S. C.

Address of Welcome

Response to Address of Welcome—Dr. M. L. Townsend, Charlotte, N. C.

President's Annual Address—Dr. J. P. Munroe, Charlotte, N. C.

Address.

J. P. MUNROE, M. D.
PRESIDENT 1920-1921

W. W. FENNELL, M. D., F. A. C. S.
PRESIDENT 1921-1922

INVOCATION.

Rev. A. D. P. Gilmour, D.D., Pastor of the First Presbyterian Church, Spartanburg, S. C.

Our Gracious Heavenly Father, we thank Thee for the noble men who constitute our physicians and surgeons. We give Thee hearty thanks for their presence; for their devotion to the higher ideals, the ideals of serving suffering humanity. We thank Thee for all the progress which they have made as they have developed the merciful ministry of healing the diseased minds and the diseased bodies of the human race. We are rejoicing in the success of their discoveries and inventions and the amount of human suffering which they have relieved. We thank Thee for the ever increasing number of the finest of them, who with a loyal love and earnest devotion follow in the footsteps of the greatest Physician of us all, who, like Him, are going about doing good. We pray Thy divinest blessing and the illumination of the Spirit of the Living God upon this convention of our physicians and surgeons; that their good fellowship the one with the other, that the expression of their experiences and their mutual counsel may lead to a still further progress in their great work.

Through the Lord and Savior, Jesus Christ.—Amen.

ADDRESS OF WELCOME ON BEHALF OF THE CITY OF SPARTANBURG AND THE MEDICAL SOCIETY OF SPARTANBURG.

Dr. H. R. Black, Spartanburg, S. C.

Mr. President and Members of the Tri-State Medical Association:

It is indeed a great privilege and a great pleasure to welcome you to our city. Spartanburg has waited three long years to receive and honor you.

In 1918, three years ago, she was to have received and entertained this Association. The delay was necessitated through the recent European and world-wide war. All this country became involved in that terrible conflict and the government authorities in Washington pitched into our midst Camp Wadsworth. From that time until the armistice bells were sounded everything in and about Spartanburg was of a war-like nature. Our hotels were overcrowded; our boarding houses were filled to overflowing; our restaurants and cafes were insufficient to care for the hungry; our street cars were packed and jammed with hustling humanity; our streets and sidewalks were crowded with soldiers; our hacks and cabs and automobiles were multiplied almost overnight by sight drafts on private owned vehicles. Cooks were scarce and hard to get, indeed, help of every kind was difficult to secure. Truly, at that time Spartanburg could not have entertained you in the fashion becoming your custom and gentleness of manner. However, we were glad to have the camp and the boys with us. We did everything in our power to entertain them as best we could. And now that they are gone, we turn our open arms to the Tri-State Medical Association, an army composed of a different sort of soldiers, an army made up of highly specialized surgeons and internists, gynaecologists, roentgenologists, neurologists, and "ologists" of other kinds and sorts, who come from different states, kindred states, with a common purpose of telling each other how to accomplish certain deeds; how to do this thing and that thing and other things; how to arrive at a correct diagnosis; how to correct and interpret pathological conditions; how to restore the diseased and disabled to a state approaching normality. Each and every one of us should join our home guard in the great fight to save and to prolong human life; and with guns of war trained upon the invisible foes of battle—with no lapse in our duty of the guarding safely the lives of our own people, with unabating energy and tireless efforts, the medical profession meets, fights and overcomes difficulties and moves on in the great battlements that began so many years ago and that will, no doubt, continue for so many years to come.

To you, the members of the Tri-State Medical Association, members of the medical profession from the two Carolinas and Virginia, Spartanburg extends to you a hearty welcome and offers to you the keys to her hospitality.

I thank you.

(Applause).

RESPONSE TO ADDRESS OF WELCOME, TRI-STATE MEDICAL MEETING.

Spartanburg, S. C.

M. L. Townsend, M.D., Charlotte, N. C.

Dr. Black, Chairman, Ladies and Gentlemen:

We thank you most genuinely, Dr. Black, for this kind public expression of the welcome which we had already been made to feel.

The Tri-State Medical Society of the Carolinas and Virginia is convinced beyond peradventure that your hearts, homes and your beautiful city are indeed thrown wide open to us. I know that I speak the sentiment of every individual member when I say that your Medical Society, the people of your wonderful city and your glorious state are truly royal hosts.

We shall try to deport ourselves while with you as grateful guests and shall return home with strengthened ties of love, friendship and brotherhood. We may possibly never be able to repay the debt we shall owe for your cordiality; but we won't forget you.

A wholesale merchant had occasion to write a delinquent country customer and ask him to pay up. The letter he received in reply was something like this:

"Dear Sir: I received your letter about what I owes you. Now be pashent, I ain't fergot you an' as soon as folks pays me, I'll pay you, but if this wuz judgment day an' you wa'nt no more ready to meet your God than I am this account, yo' sho' goin' to hell. Goodbye."

No! Doctor Black, we won't forget you. "Don't you worry about your pay, Doc, you'll get your money, don't you worry about that."

Ladies and gentlemen, the opportunity is ours, we find ourselves assembled in a really wonderful city, a city that for one hundred and thirty-five years has breathed only the atmosphere of educational refinement and culture—a city where every courtesy is shown us and ample provision is made for our comfort and pleasure. We are the guests of truly royal hosts and hostesses. Let us improve this opportunity which can come to man but seldom in a life time and make this meeting one that can never be forgotten. Let us leave with this generous, cordial people memories approaching as nearly as possible, the superior ones we shall carry away with us.

Ah, fill the Cup:—what boots it to repeat
How Time is slipping underneath our feet:
Unborn TOMORROW, and dead YESTERDAY,
Why fret about them if TODAY be Sweet!

Ah, my Beloved, fill the cup that clears
Today of past regrets and future fears—
TOMORROW? Why Tomorrow I may be
Myself with Yesterday's Sev'n Thousand Years.

Lo! some we loved, the loveliest and best
That Time and Fate of all their vintage prest,
Have drunk their Cup a Round or two before,
And One by One crept silently to Rest.

And we, That now make merry in the room
They left, and Summer Dresses in new bloom,
Ourselves must we beneath the couch of Earth
Descend, ourselves to make a couch—for whom?

Ah! make the most of what we yet may spend,
Before we too into the Dust descend;
Dust into Dust, and under Dust to lie,
Sans Wine, sans Song, sans Singer, and—sans End!

'Tis all a Chequer-board of Nights and Days
Where Destiny with men for Pieces plays:
Hither and Thither moves, and mates, and slays,
And One by One back in the closet lays.

The ball no question makes of Ayes and Noes,
But Right or Left, as strikes the Player goes;
And He that tossed Thee down into the Field,
He knows about it All—He knows—He knows!

The moving finger writes; and, having writ,
Moves on; nor all thy Piety nor Wit
Shall lure it back to cancel half a line,
Nor all thy Tears wash out a word of it.

Friends and Confreres—the road may be rough, the task may be irksome and our execution may be crude and bungleSome, but, "Virtue has its own reward." The pay may seem scant, yet lives of service will not have been spent in vain if we merit the confidence of those who put their trust in us.

"When I get to musin' deeply
'Bout them times what use to be,
An' the swellin' tide o' mem'ry
Comes a sweepin' over me,
Then among the wrecks o' long ago
That's driftin' on the crags,
I can see our fam'ly doctor
With his leather saddle-bags;

With his crown so bare an' shiny
An' his whiskers white as snow,
With his nose jest like a piney
That's beginnin' fer to blow—
Fer he painted it with somethin'
From his bottles 'r his kags,
That he allus carried with him
In his rusty saddle-bags.

When the whoopin' cough was ragin'
'R the measles was aroun',
Then he'd mount his rhubarb pony
An' go trottin' out o' town
With his saddle-skirts a floppin'
An' his laigin's all in rags,
An' the roots an' herbs a stuffin'
Out his pussy saddle-bags.

Then when mam' was down with fever
An' we tho't that she 'ld die,
That ole feller didn't leave 'er
An' he never shut an' eye;
But he set there like a pilot
Fer to keep 'er from the Snags,
An' he brought 'er through the riffle
With his musty saddle-bags.

I can see 'im with his glasses
Set a-straddle of his nose,
With his broad-rimmed loppy beaver
An' his loose, ol' fashioned clo'es;
I can see 'im tyin' at the gate
The laziest o' nags,
An' come puffin' up the pathway
With his heavy saddle-bags.

But he started on his travels,
Many, many years ago,
Fer the place where life unravels
An' dividin' waters flow;
So I hope he's reached the haven
Where no anchor ever drags,
An' has landed safe in heaven
With his shinnin' saddle-bags.

The next annual meeting of the North Carolina Medical Society will be held at Pinehurst, N. C., April 26-27-28.

The Health Officers' meeting will be April 25.

A CLINICAL DISCUSSION OF THE PREVENTION AND RELIEF OF HEART DISEASE*.

J. P. Munroe, M.D., Charlotte, N. C.

In electing me president of the Tri-State Medical Association you have conferred upon me an honor and imposed a duty. I appreciate the honor and ask your indulgence and bespeak your cooperation in my efforts to perform the duties of your chief executive.

It is especially pleasing to preside at the session of this association held in the city of Spartanburg. Considering its size and the number of its inhabitants, less than 25,000, Spartanburg is a unique and, in some respects, a rather remarkable city. With its splendid system of railroads, it is the gateway through which the commerce of the middle West passes to the five great South Atlantic ports of the Carolinas and Georgia. In its commercial and manufacturing enterprises, it is representative of the most progressive element of the New South. With its fine traditions and educational institutions, it typifies, also, the best culture of the Old South. As one of her own writers has said, "While athrill with electric energy of modern business, Spartanburg has never lost the fine spirit of the higher life that comes from the sixty-six years of Wofford and thirty years of Converse."

One has but to glance at the statistics of the army recruiting stations, at the medico actuarial investigations of the insurance companies and the tabulated reports of the census bureau to realize that too much emphasis cannot be placed upon the study of diseases of the heart. Frederick (1) after summing up the ratio of heart impairment in the army experience finds that about 3 per cent of the men of military age have heart impairment. The results of life insurance experiences are effected somewhat by the fact that obvious cases of heart impairment do not present themselves for examination still the rejection from this cause is 2.44, according to the last report of the Prudential

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(1) A. M. A. Journal, May 15, 1920, Vol. 24.

*President's annual address at Spartanburg meeting of the Tri-State Medical Society, Feb. 16-17, 1921.

Life Insurance Company. The Association for the Prevention and Relief of Heart Disease in New York City presents a statement indicating that 25,000 children, or about 2½ per cent of the children of school age in the city of New York have organic diseases of the heart.

Census reports from United States registration area show that deaths from heart diseases of all kinds average higher than that from any other disease. It is an interesting fact, also, that the death rate from this cause showed a marked increase for the year 1918 as compared with previous years leading back to 1900. In 1900 the death rate was 123.1 per 100,000. In 1918 it was 160.5 per 100,000, while the death rate from tuberculosis and pneumonia showed an average decrease during this period. In the case of tuberculosis the decrease was 180.5 to 148 in 1918; pneumonia from 180.5 in 1900 to 149.8 in 1917, 1918 being the only year in which pneumonia had a higher death rate than any of the other diseases, which was 204 per 100,000—due to the epidemic of influenza. It must be remembered, however, that it is difficult to make an accurate comparison of the mortality from heart diseases in modern registration reports with the returns of a generation ago on account of the greater accuracy of more recent observations and better diagnostic methods. Still there is much to be learned and, as Dr. Hoffman says, "Before much progress can be made in scientific discussions of so-called heart disease, much further research in clinical medicine is imperatively called for." Sir James McKenzie, perhaps, the foremost authority on heart affections, in one of his addresses took occasion to lay it down as the first principle that "as disease is made manifest to us only by the symptoms it produces, it is imperative that the first step should be to understand the nature and the significance of symptoms." It is of primary importance that we have a clear understanding of what is meant by physical signs indicating structural changes in the heart and by symptoms which indicate the inefficient performance of function.

Structural Symptoms.

The heart in health has a certain position, size, rate and rhythm and its sounds certain peculiarities. A departure from the normal in any one of these particulars is considered a physical sign of diseases produced by a structural change. These Sir Jas. McKenzie calls structural symptoms. While physical signs are often associated with heart failure, as McKenzie has well said, "heart failure is not revealed by a physical sign." Indeed there is a tendency with all of us to attach too much importance to physical signs of organic diseases. By many, a heart murmur is regarded as a sign that the heart is seriously impaired and by reason of such an assumption the patient is subjected to needless anxiety. S. Calvin Smith (2) says: "Let us pursue our investigations of the heart and its affections by disabusing our minds of such earlier teachings, which gave us the impression that a "murmur" is the indispensable factor in cardiac diagnosis, and in its place keep before us a sentence which might well be called today's

Cardiac Aphorism.

"The muscle is of more importance than the murmur:
The rhythm is of more importance than the rate."

Functional Symptoms and Reflex Symptoms.

The essential matter is, does the heart do its work efficiently. The purpose of the circulatory system is to supply a constant stream of material to the tissues for their nutrition and to carry off waste products. Inability of the heart muscles to maintain efficient circulation may be due either to some defect in the heart muscle itself, or to some impediment obstructing the circulation, or disturbing the adjustment of the various forces concerned.

A study of the heart both with the body at rest and during exercise is essential in order to appreciate the significance of the symptoms of heart inefficiency. The force necessary to maintain circulation when the body is at rest is called the rest force, and that which is called into play when effort is made is called the reserve force. When exercise is taken the reserve force is brought into action and enables one to take all forms of ordinary effort with ease and pleasure. When we say the "exercise tolerance" is normal, we mean the reserve force is sufficient for the ordinary demands of life. The first signs of inefficient heart action is premature ex-

haustion of this reserve force. Exercise that was formerly taken with ease now produces certain distressful sensations. The reserve force is not equal to the demands made upon it and we say "exercise tolerance" is diminished. There are several kinds of sensations which indicate the heart's inefficiency; two of distinct importance, one breathlessness which arises from the heart's failure to supply a sufficient amount of blood to the brain centers of respiration; the other pain and oppression in the chest. This is usually reflex, being felt in the front part of the chest, sometimes the inner side of the left arm and left side of the neck—occasionally transferred to the right side. These are the points of distribution of nerves coming from the same region of the spinal cord, that the cardiac sympathetic runs from; namely, the seventh cervical to the fourth dorsal inclusive. Then again pain may originate in the heart from arteriosclerosis and partial occulsion of the coronary arteries. Hyperalgesia of the skin in the left chest is another sensory symptom often present. Other symptoms are giddiness, dizziness or vertigo, palpitation or periodic rapidity of the heart rate of which the patient is uncomfortably conscious; fainting usually found in the emotionally high strung cough. Cheyne-Stokes breathing occurs in advanced cases. Cyanosis is usually a late symptom. Oedema of ankles and feet, which appears at the close of day, and has a tendency to disappear when patient is at rest in bed.

When the heart fails to meet the circulatory needs at rest, we have both the physical signs and symptoms of failure (decompensation) and exercise tolerance is absent.

In handling my own cases I find it convenient to keep in mind a clinical classification modeled somewhat after that used by the cardiac clinic of St. Luke's Hospital, New York City.

Potential—Cases with history of the allied rheumatic manifestations but without evidence of cardiac disease; acute rheumatism, recurrent tonsilitis, chorea, growing pains and recurrent joint pains, infected teeth, syphilis, nephritis, arteriosclerosis and certain toxic conditions — infectious diseases and especially septic infections—physical and emotional strain.

First Degree—Physical signs of heart disease with no symptoms referable to the heart—exercise tolerance normal.

Second Degree—Physical signs of heart disease and symptoms referable to the heart—exercise tolerance diminished. Excessive dyspnea, palpitation and tachycardia on exertion.

Third Degree—Physical signs of cardiac failure (decompensation). Heart fails to meet the circulatory needs at rest—exercise tolerance absent. Effort Syndrome: Excessive circulatory reaction to exertion without physical signs of cardiac disease—exercise tolerance diminished.

Potential Cases—Reference may be made here to Cabot's report of 600 cases of "failing heart" in which he describes the four most common types of heart disease.

1. Rheumatic caused by rheumatism and rheumatic allied affections.
2. Syphilitic.
3. Nephritic.
4. Arterio-sclerotic.

These four types based on their etiology represent 93% of his total, the remaining 7% being cases of goiter or doubtful conditions. Broadly speaking, all cases of specific infection, nephritis, arterio-sclerosis, and many of the general infections are potential cardiacs. A recent publication of the Association for the Prevention and Relief of Heart Disease in New York says: "Although we do not know definitely the causes of rheumatism, enough evidence is at hand to make us quite certain that we are dealing with a germ disease—an infection which probably enters the system through diseased tonsils, adenoids, or decayed teeth." Six years ago this association was formed and a number of cardiac clinics established in New York City, primarily for children—some of them taking adults.

Dental clinics were also established about the same time. The heart clinics have had under special observation cases of infected tonsils, adenoids, rheumatism, chorea, myositis, bone and joint pains—so-called "growing pains." A recent report from the Bellevue Hospital states that it is too early yet to give final statement of the effect of this organized campaign against the allied rheumatic affections, but the opinion expressed is that tonsilectomy has made no marked impression on the

rheumatic affections of children between the ages of 5 and 14, but that it has caused a marked reduction in those from 15 to 29. Wm. St. Lawrence reports 85 cases of tonsilectomy observed for an average of three and a half years, fifty-eight (58) of these were cardiacs and only one had cardiac failure after operation. In all these statistics the point is emphasized and it is confirmed in my own experience that all potential cases should be followed up and examined after the supposed cause has been removed. In other words, convalescent care should be prolonged and the patient should be directed by the physician even after returning home until all danger of cardiac complications have disappeared.

Of equal importance is the watchful care of the heart during the course of other acute infections of childhood and adolescence. Children should be kept strictly in bed during the course of an acute infection lest the heart weakened by the infection receives the initial damage that shows itself in later years.

Preventive convalescence is a term that has been used to indicate a longer period of convalescence after an acute illness. Instead of its being a matter of a few days it should be extended over weeks. Measles and influenza are today reckoned as important causes of heart maladies; not that the heart is affected by the attack but by reason of the patient's return to his accustomed duties without a sufficient period of convalescence and too soon the heart muscle weakened by disease is put to a strain and organic change occurs. The physician should test the heart's action and its response to exercise before allowing the patient to return to work. The same principle applies to patients after a surgical operation, especially if he has an organic heart disease, or other chronic disease.

Effort Syndrome—This has been described as excessive circulatory reactions to exertions without physical signs of cardiac disease. These cases frequently consult us on account of symptoms referable to the heart as well as general exhaustion. Dr. H. R. Carter (3) uses the term to include what he speaks of as "irritable heart," "Athletic heart," "neurocirculatory asthenia," "functional cardio vascular disorder" and this title, Effort Syndrome, he says, is chosen because it does not commit us to a conception of the condition as being cardio-vascular in origin. Exhaustion, breathlessness, palpitation and pain are usually brought on by exertion. As a matter of fact many cases which are classed under this name might better be transferred to the potential cardiacs. Perhaps some will ultimately prove to be cases in which subjective symptoms appear before physical signs of organic change. De Costa inclines to the opinion that they are due to some focus of infection.

S. Calvin Smith says: "The physician should abandon the skepticism which now belongs to the past and harmonize his mental attitude with the trend of the professional thought of today, which teaches that heart affections belong in the catagory of preventable and curable conditions, but as in tuberculosis preventability and curability depend upon the recognition of early symptoms."

Ten years ago when a patient presented no symptoms other than shortness of breath on exertion, pain in the chest, palpitation or a feeling of faintness, it was customary to listen at the chest—reassure him that perhaps he had a little digestive disturbance, "gas on the stomach"—and that his heart trouble was "functional."

"Functional!" exclaims Smith, "as if a functional fault in the heart could be lightly dismissed, but suppose it had been his leg that was not functioning properly; would not a more thorough search have been made for the cause?" Today such a one will have a complete history taken and a thorough search made of the habits and diseases—past and present. The pulse is studied carefully as to rate, rhythm, and voluntary exercise tests are made. X-ray and other instruments of precision are brought into use. Thus early diagnosis is made before irreparable damage is done. The first essential in treatment is to remove any and every cause. The second is to conserve and strengthen the heart's forces.

General control of damaged hearts— first degree.

Patients with physical signs of heart disease with no symptoms referable to the heart should be kept under regulation rather than restriction. If they

(3) Southern Medical Journal, December, 1920.

are children, most of them are allowed to pursue the ordinary exertions of childhood. An intelligent mother, if told of the condition, will quickly recognize any symptoms like shortness of breath, evidence of pain, that would call for a restriction of exercise. It is, perhaps, best to eliminate competitive games of running, football, tennis, etc., at least, until tolerance is well established. First degree adults should be advised to live on a lower level than formerly and have a thorough examination made, at least once a year.

Second degree cases require more patience and skill in managing. Children can best be managed in classes under an expert physical director. All these cases should be put to bed, preferably in a hospital for several days while the examinations are being made. With these cases there must be a constant hunt for the foci of infection and this must be kept up until all possible sources of infection have been found and removed. This having been done, our next duty is to establish tolerance to exercise. The most valuable means of doing this is by graduated exercises, preferably calisthenics. I am often asked by young women in college to give them a certificate excusing them from gymnasium exercises on account of heart weakness. The proper plan to pursue with such cases, after they have been thoroughly examined, treated and classified, if coming in this second degree type, is to excuse them from volley ball, basket ball, tennis and running, but to require them to take graduated exercises, preferably calisthenics under a trained instructor. The drills used by the British Heart Hospital under Dr. Thos. Lewis of London have been adopted by the St. Luke's Cardiac Clinic and consist of exercises divided into three groups:

Group 1—5 minutes.
Group 2—10 minutes.
Group 3—15 minutes.

Each successive group being taken after tolerance has been established in the preceding one, making thirty minutes in all of calisthenic exercises. After that if the child is not fatigued, one-half more is spent in simple plays. Stair-climbing is also used as a graduated exercise for cardiacs. Unregulated stair-climbing is where the child carries on as any normal individual. By regulated stair-climbing is meant that the child is instructed to climb one flight of stairs slowly and then wait upon the landing until dyspnea, if present, has disappeared. It is well to have some number, say, 50 counted, while waiting, then the child proceeds with other flights in a similar manner. Second degree cases in private practice have to be handled usually without the aid of classes under trained teachers.

Of course, third degree are bed cases and the aim of all treatment after the immediate saving of life is to get the patient back to the second degree and ultimately the first degree. The origin and the insiduous progress of heart disease are, in the majority of cases, hidden from us and we are only brought face to face with heart disease after it has gone beyond the hope of cure, let alone prevention. On the other hand, if the trouble is detected early in the progress of an established heart leasion, it can often be absolutely checked. Taken at an early stage in its development, a proper limitation of the patient's activities, a suitable mode of life and if necessary, well selected medication, controlled by the close observation and frequent examinations of an intelligent physician, will in the majority of instances keep the heart efficient and enable the patient to lead a useful life of reasonable activity and one free from suffering.

The greatest difficulty one in private practice experiences is due to the fact that he does not have sufficient control of his case and examinations are too infrequent. Every physician has advised and prescribed for cases of heart disease, and after a period varying from a few days to a few weeks has dismissed the patient as "improved" or "cured." Not long afterwards the patient returns to the physician for much needed help—only to improve again; be discharged and again return; but each return finds a more severe condition to be relieved. Each break in compensation requires a longer period for recovery and means a gradually failing heart. So frequently is this picture terminated by death after a few breaks of compensation that it is expected by most of us. What is the remedy for this ever recurring picture? Systematic control over a long period of time and examination at regular intervals.

In the children's clinics in New York first degree cases are required to report

for examination every three months. Adult cases in private practice can seldom be induced to report for examination until they have reached the second or third degree. Our patients should not be lectured in a way to alarm them but they should be told frankly of their condition and advised to adopt a lower level of living than formerly. And certainly one thorough examination annually is not too much to require. It is the perversity of human nature to believe that which he wishes to be true. It is one of the common weaknesses of the cardiac, encouraged all too often by a kind hearted but careless physician to attribute all his sufferings to "gas on the stomach." True, cardiacs are often distended with gas and great comfort may come from the relief of this distention: but this relief has been a delusion and a snare to many an unfortunate one who accepted it as proof of his idea that he had no organic trouble.—N. B. Vinson.

Rest—Rest in bed is essential during the several days that are consumed in making the various diagnostic tests. This should be continued as long as exercise of the mildest kind causes dyspnea, pain or palpitation.

Exercise—The patient after an acute attack may first be propped up in bed, then in a chair. When this can be done without discomfort, he may be allowed to walk around the room or in the house.

Graded exercises should then be taken under skilled guidance. Calisthenics as given in the cardiac clinics is the ideal plan for children. Adults are less likely to stick to exercises of this kind and I have found that walking, golf or any light exercise that also diverts the mind is very beneficial and more attractive.

Diet—In the treatment of chronic cardiacs the general rule is to avoid foods in great quantity and especially rich indigestible foods. In general no great restriction is ordinarily to be imposed as to the kind of food, but if needed for first few days of treatment one may adopt Balfour's rules for dieting weak hearts.

1. There must never be less than five hour intervals between meals.

2. No solid food is ever taken between meals.

3. The principle meal should be taken in the middle of the day.

4. All those with weak hearts should have their meals as dry as possible.

Baths, tepid water, neither hot nor cold, should be used for general bathing purposes.

Cardiac drugs should be used only under the direction of a physician and under no circumstances should the patient take digitalis ad liberatum.

Conclusions.

1. The problem of the cardiac is becoming of increasing importance to the community and the profession.

2. Preventive measures may reduce the incidence of cardiac disease materially. In the present state of our knowledge the most important preventive measure in children is attention to the allied rheumatic conditions, the tonsils, adenoids, teeth, rheumatism, "growing pains" and chorea, and longer periods of convalescence after acute illness.

3. Cardiac disease does not necessarily mean early death or chronic invalidism. Intelligent supervision makes and keeps a cardiac productive.

4. Preventive convalescence means an extended period under competent supervision, spent after the ordinary convalescence from an acute attack, or after an exhausting disease, or after a surgical operation upon any chronic cardiac.

5. Prevention of the occurrence of heart disease and its detection in the early stages demands intelligent physical examinations of every individual, at least annually.

Dr. R. E. Hughes, Laurens, S. C.—I move that the visiting physicians who are not members of the Association, including Dr. E. A. Hines, be extended the courtesies of the floor, and we shall be glad to hear from them when they care to speak to us.

Motion seconded and carried.

Dr. E. A. Hines, Columbia, S. C.—I have long looked upon this organization somewhat as a South Carolina institution. If you will bear with me I will tell you the reason. It is said that every institution is the lengthening shadow of a man. So I have looked upon this institution, though not having the honor of being a member, as the lengthening shadow of Dr. R. E. Hughes, of Laurens, S. C. I appreciate

the privilege of being with you today. I am sorry I am not a member. I see now my great mistake but I will do better in the future.

By the President, Dr. J. P. Munroe, Charlotte, N. C.—We have arranged, at the request of the local committee of arrangements, to have a public session tonight and that will be held at the First Baptist Church and the public is cordially invited to that. There are four papers to be presented on that program and I hope we will have a full attendance. Furthermore, Dr. Black has kindly invited us to a smoker at 10:30 tonight and we are going to adjourn promptly to go there.

Dr. Stewart McGuire, one of our ex-presidents, extends an invitation to all the ex-presidents of this Association to a dinner with him this evening.

The meeting will now be divided into two sections. The medical section will meet in this room and the surgical section in the Chamber of Commerce, just across the street. All illustrated papers will be read in the surgical section. That room has been darkened and a lantern installed.

Dr. W. W. Fennell, vice-president from South Carolina, will be in the chair in the surgical section.

We will now recess for about five minutes and allow those who wish to attend the surgical section to retire.

ON THE CARE OF PATIENTS MANIFESTING HIGH BLOOD PRESSURE.*

By Lewellys F. Barker, M.D.,
Baltimore, Md.

The high blood pressure patient we have always with us. Not a working day passes in which the general practitioner or the consulting internist fails to be confronted with the problem of the management of one or another patient in some stage of chronic arterial hypertension. Surgeons contemplating operative interference and medical and surgical specialists active in more localized domains dare not neglect consideration of the significance of high blood pressure in their patients and must learn how to value it. The management of patients manifesting high blood pressure is then a topic that interests every one of us. We remain, it is true, in dense ignorance, as yet, concerning many points in connection with the causation and course of high blood pressure about which we would fain have knowledge. Experienced physicians have, however, gradually accumulated data that can be utilized greatly to the benefit of hypertensive patients. To the application of some of the data to therapy my remarks at this time will refer.

Classification of Therapy.

As medicine has gradually passed from the stages of tradition and empiricism to that of modern science, therapeutic effort has become ever more rationally based. Thorough diagnostic study now precedes therapeutic intervention. When a patient applies to us for relief we endeavor by precise methods (analytical and synthetical) to make a survey of him as a whole in order that we may recognize all discoverable deviations from normal structure and function. We try, also, to ascertain the sequence of events in any pathological process that we find to exist. In other words, we determine what functions are abnormal and we learn all that we can regarding the underlying processes. We inquire into their possible internal and external causes (etiology), and we consider the effects of the causes and the serial order in which the effects have appeared (pathogenesis). It is our aim to acquire as full a knowledge as is practicable of the physical, psychic and social status of our patient, of the conditions that underly this status and of their development and causes before we permit ourselves to decide upon the measures best suited to check the progress of disorders, to restore normal functions, or to bring functions nearer to the normal.

When planning therapeutic regimes it is desirable in each instance to have clearly in mind precisely what we are attempting to do. It is, accordingly, helpful to consider therapy under two headings: (1) availing remedial measures and (2) effects to be produced by the measures.

*Read by invitation at the twenty-third annual session of the Tri-State Medical Association of the Carolinas and Virginia held at Spartanburg, South Carolina, February 16, 1921.

When we think of treatment under the first heading, that of the kinds of measures that can be instituted, we select from our lists of remedies (diet, baths, air, light, exercise, rest, recreation, massage, electricity, drugs, vaccines, sera, nursing, dentistry, surgery, etc.) those that we regard as applicable to the case in hand. But before making such selection, we do well to consider the treatment of the patient under the second of the headings mentioned, namely, the effects to be produced, or what we really desire to do. We can, I think, divide what we wish to accomplish into four parts:

1. Removal of causes or rendering them harmless (etiological therapy).

2. Restoration of the disturbed functions to normal by direct measures (functional therapy).

3. Support of the reaction of the organism against the disease process or its cause (regulatory therapy).

4. Relief of single symptoms that harm the patient or disturb him (symptomatic therapy).

Etiological Therapy of Hypertensive States.

Causal therapy is the ideal of every rational therapeutist. Success in treatment is notably greater in those diseases for which we know causes that are removable or that can be rendered harmless. Concerning the real cause, or causes, of chronic arterial hypertension, however, we are, unfortunately, still profoundly ignorant. We are familiar with certain groups of patients in whom high blood pressure occurs and know the symptoms and signs that they present; we are acquainted, too, with the general course of the malady in these different groups and have learned the common terminations of the disease-process. But our ignorance of the etiology and the pathogenesis of chronic arterial hypertension is far more impressive than our knowledge. This want of knowledge seriously handicaps us in our efforts to plan a causal therapy.

Clinicians have, nevertheless, made shrewd observations of patients that have yielded clues to the kinds of constitutional make-up and the varieties of environmental influences that tend to favor the development of chronic arterial hypertension. That hereditary and constitutional factors are of importance in the causation of hypertensive states would seem clear from the fact that high blood pressure is often met with in several members of the same family, all of whom exhibit certain more or less characteristic physical and mental traits. Thus, on the physical side such persons often exhibit the so-called apoplectic habitude (stocky build, short neck, plethora, obesity) and on the mental side the marks may be almost as distinctive (worrying tendency, irritability, over-seriousness, inability to play, circumscription of interests, ill-balanced life). Families in which megrim is common and families in which goitre is prevalent seem also particularly prone to the development of hypertensive states. Just what is responsible for the defects in the germ plasm that account for these constitutional inferiorities (vasopathic, neuropathic, endocrinopathic) we do not yet know. But it seems certain that in some families, the members are, wholly aside from environmental conditions, especially predisposed to the hypertensive maladies. One member after another develops high blood pressure and ultimately makes a characteristic exit (apoplexy, angina pectoris, heart failure, pulmonary oedema, uraemia, terminal infection). The members of families thus predisposed seem to start with "bad tubing," with vulnerable vasomotor systems, or with ill-balanced endocrine organs. Sooner or later, even under favorable environmental influences, the evidences of chronic arterial hypertension appear in such persons.

Careful analyses of the histories of hypertensive patients indicate, all the same, that certain environmental influences must be counted also as causes of the maladies of which chronic arterial hypertension is a symptom. For, exposed to these influences, normal persons may develop high blood pressure and persons with family predisposition will manifest high blood pressure earlier in life than they otherwise would. Arteriosclerosis and chronic renal disease are so often met with in association with chronic arterial hypertension that many believe that they must have etiological factors in common with it. Among the influences in the environment now thought to contribute to the origin of such states I may mention: (1) infectious processes (recurring tonsillitis, oral sepsis, sinusitis, influenza,

scarlet fever, diphtheria, typhoid fever, etc.), (2) chronic intoxications of exogenous or endogenous origin (lead poisoning, chronic alcoholism, tabagism, excessive use of condiments, over-eating, chronic constipation), (3) external influences that favor metabolic disturbances such as diabetes, gout and obesity and (4) faults in general hygiene that increase the wear and tear of life on either the mental or the physical side (excitement, worry, anxiety, overwork, indolence, injudicious clothing, exposure, sexual excesses).

The several possible etiological factors just mentioned should be considered when we are asked to try to prevent chronic arterial hypertension in the predisposed or to arrest the progress of the process that underlies it after it has appeared. The constitutional make-up of persons already born can not, of course, be altered. It is questionable, too, whether or not our knowledge of heredity is as yet sufficient to justify any rigid eugenic campaign directed especially toward the prevention of hypertension. When, in the future, genetic factors come to be better understood, hypertension of cacogenic origin may, perhaps, be avoidable. At present our preventive and arrestive efforts are, of necessity, restricted almost entirely to (1) the prevention of the acute infectious diseases, (2) the removal of chronic foci of infection, (3) the prevention of intoxications, and (4) education to hygienic living.

In the early stages of chronic arterial hypertension, a thorough general diagnostic survey of the patient will often reveal foci of infection, recurring intoxications, or glaring defects in personal hygiene that warrant active therapeutic intervention. Focal infection, if discovered in association with incipient hypertension, should be dealt with in the same way as in chronic infectious arthritis or in chronic anaemia. Pyorrhoea alveolaris, periapical granulomata, infected tonsils and adenoids, infected paranasal sinuses, chronic appendicitis, chronic cholecystitis, chronic prostatitis (in men) and chronic pelvic inflammatory disease (in women) should be looked for and, if found, receive appropriate surgical treatment. Discretion should be used, however, in dealing surgically with such focal infections in the advanced stages of hypertensive maladies for there would be, as a rule, but little, if anything, gained by radical surgical treatment after extensive retinal hemorrhages or cerebral apoplexies have occurred, when outspoken cardiac failure has appeared or severe renal decompensation has become manifest. That poisonings by lead, by alcohol, by tobacco, by excess of food or by the products of intestinal stasis, if they exist, should be stopped, goes without saying. In cases of hypertension in which symptoms of diabetes, of gout or of obesity are also present something can be accomplished by an appropriate dietetic regime directed toward the particular vice of metabolism concerned. The hypertensive states that accompany Graves' disease or those met with in association with thyroid adenomata can, sometimes, be benefited by strumectomy. The best results, however, in prophylaxis and in causal therapy are doubtless obtainable through careful supervision of families by general practitioners, who are in large part responsible for the education to health of the people among whom they practice. Hygienic education is, of course, important for all. It can be especially helpful in families predisposed to high blood pressure, to arteriosclerosis and to Bright's disease. Physicians are convinced that a sensible diet, regular hours of work, rest and recreation, good bathing habits, proper care of the emunctories, avoidance of excesses of all sorts, the cultivation of self control, and the maintenance of a well balanced life with normal satisfaction of all the human desires and instincts will go far toward promoting health and longevity and toward preventing the development, even in the predisposed, of chronic cardio-vascular-renal disease.

And even after a hypertensive process has set in, more can be done for the patient by educative measures than in any other way. Speaking on high blood pressure at the Ohio State Medical Association last year, I said: "Psychotherapy, in the broad sense of dispelling fear, of inspiring confidence and hope, of educating the patient regarding the nature and course of his malady, of guiding him toward a more hygienic mode of life and of cultivating in him the ability to face the realities with serenity, will be found to be the most beneficently potent and serviceable agent that we possess." I believe that most internists of experience will con-

cur with this opinion.

Among the laity there is much fear of high blood pressure, for the public, too, has learned that, in the long run, patients with high blood pressure die from uraemia, from heart failure, from cerebral apoplexy or from terminal infection. But it is a mistake to allow patients in the early stages of hypertension to suffer too much from fear. Physicians now know that patients may manifest high blood pressure for many years and even for decades before any serious complications set in. Since the blood pressure is measured nowadays as a routine clinical test in all patients who apply for diagnostic studies and for examinations for life insurance, it is important that the laity should be instructed regarding the earlier and more benign stages of the hypertensive process underlying it, for he is all too prone to have in mind when high blood pressure is mentioned only the malign sequels of the advanced stages.

Much can be done by physicians to dispel fear and to arouse hope in a hypertensive patient by explaining to him his precise situation after it has been thoroughly investigated. The physician should assure the patient that he will be given definite instructions how to live in the way best suited to cure, to arrest, to delay or to mitigate, according to the stage of the process that is found to exist. Unnecessarily frequent measurements of the blood pressure should be avoided. When a patient has been made to understand that a rise in his blood pressure is often a compensatory process that is beneficial in his circumstances and that the exact height of the blood pressure is far less important than the conditions that underlie it, a good start has been made. There are circumstances in the course of a hypertensive malady that make it important to raise the blood pressure rather than to lower it. Moreover, a patient who feels that his physician, after carefully studying him, will give him the supervision that he needs and will teach him how to conduct his life so that he will neglect nothing that may be advantageous for the restoration or preservation of his health and working capacity, will usually be found co-operative and will become an obedient and grateful pupil.

The physician who applies these several principles of causal therapy in the management of his hypertensive patients will find the practice rewardful.

Functional Therapy in Hypertensive States.

When hypertension is discovered early, it can sometimes be made to disappear entirely so that there is a restitution of normal function, simply by the application of the causal therapy outlined above. And in more advanced cases of hypertension, though the function cannot be restored to normal, the blood pressure can often be maintained at a lower level than before without harm to the patient. Causal therapy is, therefore, often also the best form for bringing the disturbed function back to normal.

Physicians, however, often make use of therapeutic measures intended to lower the blood pressure directly independent of its causes (functional therapy). Drugs, electricity, radium, baths, exercises and blood letting have all been used to lower the blood pressure.

Among the drugs for this purpose, iodine preparations, nitrites, benzyl benzoate and yohimbin have been most used.

Certain patients with chronic arterial hypertension, especially when associated with outspoken arteriosclerosis, assert that they feel better during the continuous administration of sodium iodide and potassium iodide in small doses, one grain of each in water after each meal, the dosage being gradually increased until five grains of each are taken. Why, we do not know, though there are many theories as to the mode of action of the iodine preparations. Iodine preparations are helpful in syphilitic cases but in my own experience syphilis is not more common in hypertensive patients than in patients of the same age with normal blood pressure. The iodides do not lower blood pressure directly but probably exert their influence in some obscure way upon the metabolic processes, possibly through the thyroid. Of late, certain organic preparations of iodine have been introduced, notably, several combinations of iodine with proteins and fats (iodalbin, iodocasein, iodeleine, lipoiodine, and sajodin) Many hypertensive patients, however, receive no benefit from iodine therapy, and a certain number of these patients feel much worse if they take iodine in

any form. Hyperthyroid patients, especially, stand iodine preparations badly.

The inorganic nitrites, especially sodium nitrite, were formerly much used to lower blood pressure before the compensatory nature of hypertension was understood. Even now the nitrites are sometimes employed when the blood pressure is very high in the hope of avoiding accidents like cerebral apoplexy. Sodium nitrite, amylnitrite, and certain organic nitrates (nitroglycerin, erythrol tetranitrate) are really helpful in the cases of hypertension associated with angina pectoris. A hypodermic tablet of nitroglycerin (1/100 grain) dissolved under the tongue often gives quick relief. In my own practice, I rarely use the nitrites and nitrates except in the latter condition. The Lauder Brunton method of drinking a pint of water containing potassium bicarbonate, potassium nitrate and sodium nitrite in the early morning for a period several times a year has had, however, considerable vogue in England.

A word of caution against lowering the blood pressure artificially with nitrites, except with the above definite purposes in view, would seem to be in order. For if the blood pressure be lowered too much by nitrites or by methods other than those of causal therapy, harm to the patient rather than good may result. Once the arteriolar sclerosis that accompanies chronic arterial hypertension has reached a high grade, the blood pressure must be maintained at a certain level above normal in order that the patient's tissues may receive an adequate supply of blood. Cerebral, cardiac or renal decompensation can, in my opinion, be hastened by the injudicious use of nitrites.

Benzyl benzoate whose therapeutic properties have been studied recently by Macht has the power of lowering the tone of unstriped muscle. Used principally to combat colic (uterine, intestinal, renal, biliary). it has been recommended also for the treatment of angiospasm. It has not been used sufficiently as yet in arterial hypertension to permit of a definite judgment as to its value. It is given in five minim doses (or better, in 20 to 30 minim doses of the 20% miscible solution).

The systematic hypodermic administration of the alkaloid yohimbin has also been used as a vasodilator, especially in hypertension associated with stenocardiac attacks. In order to prevent its stimulating effect upon the erection centre and the respiratory centre it is usually combined with urethane, and a series of daily injections given for 20 or 30 days.

Electricity applied for five or ten minutes in the form of the high frequency current (arsonvalization) will sometimes reduce the blood pressure from ten to twenty points or more at a single sitting. Some patients have told me that they have felt much better after a course of such treatment but I have had no personal experience with this form of therapy nor with radium emanation, which for a time was much vaunted as a remedy for hypertension.

Carefully graded exercise, systematically kept up, is often followed after a time by a definite lowering of blood pressure in hypertensive patients. Fatigue and breathlessness should, however, be avoided. Walking on the level, mild golf, and gentle calisthenics are suitable forms of muscular exercise for these patients.

Tepid baths exert a favorable effect upon the blood pressure but cold and hot baths are better avoided in advanced cases. In incipient hypertension, however, a patient may safely continue his usual form of bathing—a cool shower in the morning followed by a brisk rub, or a tepid bath in the evening.

When a quick fall in the blood pressure is desired in an emergency, say, in a vascular crisis with threatened cerebral apoplexy, nothing is more efficacious than blood letting. If the patient be plethoric, one need not hesitate to withdraw a liberal amount of blood from a vein at the bend of the elbow. In less urgent cases, however, rest, a little nitroglycerin or erythrol tetranitrate, and a brisk purge followed by a few days of a lacto-vegetarian regime will accomplish all that is required in the way of a direct reduction of blood pressure.

Regulatory Therapy in Hypertensive States.

Fully as important as the causal therapy mentioned above and much more important, in my opinion, than the functional therapy just referred to, is regulatory therapy in chronic arterial hy-

pertension. By this I mean helping the body to react against the disease process or its cause.

In chronic arterial hypertension the organism reacts against the disease process by increasing the blood pressure through increase of the peripheral resistance and through hypertrophy of the heart, by increasing elimination by the kidneys or attempting such increase, and, when the kidneys are insufficient, by increased elimination of the end-products of metabolism through the gastrointestinal tract and through the skin.

These reactions on the part of the organism give us clues for regulatory therapy. We must (1) support the heart; (2) protect the kidneys; (3) provide for suitable elimination through the feces; and (4) keep the skin active.

Every hypertensive patient becomes, sooner or later, also a cardiac patient. We should do all that we can to avoid over-burdening the heart muscle, and, in case it begins to fail, support it. Small meals rather than large meals, the avoidance of physical over-exertion, and strict moderation in the use of tobacco and of alcohol, if the patient be permitted to enjoy them at all, are important for the protection of an overburdened heart muscle. Obese hypertensive patients should undergo a carefully graduated reduction cure with the idea of taking work off the heart. Once the heart begins to fail, and the patient becomes breathless on moderate exertion, or the amount of urine passed is diminished in quantity, the patient should be required to rest and cardiotonic measures should be instituted. Powdered digitalis leaves (1½ grains) combined with caffein sodium benzoate (3 grains) may be given in capsule or pill thrice daily for a week, after which the dose of digitalis may be cut in half and the medication continued for a fortnight longer.

The hypertensive patient is likely, also, sooner or later, to become a renal patient. Even though there be no albumin or casts in the urine, the kidneys are scarcely ever normal when the hypertension has lasted for any considerable length of time. Great care, therefore, should be exercised to protect the kidneys in this disease by diminishing the work put upon them. Reduction of the protein intake and of the sodium chloride intake are important measures in this connection, though the degree of reduction of salt and protein necessary will depend upon the stage of the hypertensive process and of the renal involvement. Extractives should as far as possible be eliminated from the diet; the patient should be warned against ingesting foods rich in such extractives, particularly strong meat soups. The purin intake may also, with reason, be somewhat restricted; thus the patient should be warned against too frequent indulgence in sweetbreads, kidneys, liver, brains and other foods rich in purins. Even the total fluid intake should be kept within moderate limits for an excess of fluid raises blood pressure and throws increased work on the kidneys.

Daily evacuation of the intestines is of high importance for the hypertensive patient. Regularity of habit should be insisted upon, the patient going to stool at exactly the same hour each day. Drinking a glass or two of water on rising each morning and the same amount an hour before each of the other two meals will be found helpful. An abundance of fruit and green vegetables in the diet will help to overcome constipation, and if necessary a little white mineral oil may be taken at bed time. These measures together with regular bodily exercise (calisthenics, walking, games) will usually suffice to maintain intestinal motility in the earlier stages of the hypertensive process. Patients with more advanced arterial hypertension do well to take a purgative once a week or once a fortnight; a pill containing blue-mass and colocynth taken at bed time on Saturday night and followed by a Seidlitz powder or other saline on Sunday morning will usually be found to be effective and beneficial.

The skin also should be kept active; its vasomotor reactions should remain labile. Chilling of the skin should be avoided. In climates with great variations in the daily temperature, wool, if it can be borne, should be worn next the skin in winter. Sufficient gentle exercise should be taken each day to cause mild perspiration. A daily bath with free use of the flesh brush during the bath, and followed by a brisk rub down afterward, will do much to keep the skin in good condition and to promote vasomotor lability. In the early stages of hypertension, cold baths are probably permissible, but in the later stages a warm bath is preferable.

Symptomatic Therapy in Hypertensive States.

Attention to the single symptoms of which hypertensive patients complain should not be neglected by the physician, for much can be done, even in advanced arterial hypertension, to make the patient more comfortable by means of symptomatic therapy. Here I refer to single symptoms that persist despite due attention to the causal, the functional and the regulatory therapy already outlined. Among the more important of such symptoms are insomnia, headache, dizziness, a sense of fulness in the head, certain neurasthenic symptoms (especially apprehension, anxiety and nervousness), precordial oppression or pain, and nocturnal polyuria.

The insomnia of which hypertensive patients complain is usually referred to the early morning (matutinal insomnia). The patients may go to sleep at the ordinary time but wake at four or five a. m. and are unable to go to sleep again. Often a half glass of milk or the eating of a cracker or a few resistance exercises in bed will be followed by another period of sleep. When the insomnia is more marked, mild hypnotics, say, a teaspoonful of the compound chloral and bromide mixture of the National Formulary, five grains of veronal or a little paraldehyde will suffice.

For the headaches, from which hypertensive patients suffer, a five grain aspirin tablet, the same dose of pyramidon or 7½ grains of phenacetin with ¾ grain of caffein sodium salicylate will usually give relief. If the headache be very severe, a quarter or a half of a grain of codein may be combined with these remedies. Morphine is rarely, if ever, necessary for such headaches, though it is unfortunately often given, and sometimes leads to drug addiction.

The neurasthenic complaints of hypertensive patients are often troublesome. Sometimes they are doubtless due to an associated cerebral atherosclerosis, but in many cases they seem to be more purely functional in nature. For these complaints a tactful psychotherapy in addition to general hygienic measures is the most efficacious. If the apprehension be very marked, small doses of sodium bromide or of the bromide and chloral mixture mentioned above, may be used.

For precordial oppression or pain, diuretin or theocin combined with caffein and monobromate of camphor will often be found helpful. If it be more severe, a tablet of nitroglycerin dissolved under the tongue will give prompt relief.

The nocturnal polyuria may be very troublesome, making the patient rise often at night, thus interfering with his sleep. If the bulk of the fluids ingested be taken before noon, and if the protein content and the salt content of the diet be suitably restricted, the nocturnal polyuria may grow less troublesome.

I have said very little about the treatment of the end-stages of the process with which chronic arterial hypertension is associated. In these end-stages we may meet with cerebral apoplexy, with myocardial insufficiency, with cardiac asthma, with pulmonary oedema, or with uraemic complications. When such complications appear, they must be met according to well-known therapeutic principles. But I would warn against too meddlesome a therapy in these end-stages. We should, of course, do everything that will really help, but we should not torture the patient by burdensome or painful procedures that are of problematic therapeutic value. We should rather protect him from all the unnecessary treatments that mere wishful thinking would institute and do our best to bring solace and a euthanasic end when the time for it has arrived. In therapy, we do well to avoid the presumption of power that we do not possess. We should have clear heads that are aware of actual resources, but a fuddled optimism that essays the miraculous is to be deprecated.

Conclusions.

1. In the management of patients manifesting high blood pressure, we make use of causal, of functional, of regulatory and of symptomatic therapy.

2. Though causal therapy is hampered by the unsatisfactory state of our knowledge of the etiology and pathogenesis of the conditions that underlie chronic arterial hypertension, still much can be accomplished by removal of foci of infection, by the prevention of chronic intoxications and by lessening the wear and tear of life by education in physical and mental hygiene.

3. Through appropriate functional therapy the blood pressure may be directly lowered with avoidance of threatening complications at times of angiospastic crises.

4. A deliberately planned regulatory therapy that helps to support the heart, to protect the kidneys, to keep the skin active, and to promote elimination through the intestines does much to prolong the period of activity and of comparative well-being of the hypertensive.

5. Finally, a judicious symptomatic therapy, made use of on occasion, permits of the relief of many of the special discomforts and annoyances to which hypertensive patients are subject.

A PLEA FOR A SYSTEMATIZED TRI-STATE PROFESSIONAL FIGHT AGAINST INFANT MORTALITY THIS SUMMER.

By Dr. William P. Cornell, Columbia, S. C.

According to past statistics there will occur this summer 5,287 deaths, in babies under two years of age, from diarrhoea in Virginia, North Carolina and South Carolina, most of which could be prevented by and through the medical profession.

Individual effort has been faithfully expended by every doctor treating these cases, but the continued appalling incidence and mortality of the disease speaks eloquently and forcibly for the need for some change that will produce results and better the poor record which has been unfailingly booked and published year after year with, to my mind, a very slow reduction as compared with what might have been.

It has been said that the typhoid incidence is an index of the intelligence of the medical profession of a community. Does not the same hold true for the incidence of summer diarrhoea which is equally preventable?

I believe that by a systematized campaign, intelligently managed and thoroughly waged, a result would obtain that would be immediately apparent and permanently maintained by reason of a true knowledge of the disease learned by the mothers, who would spread this knowledge to others.

According to mortality statistics for 1918 (pg. 42) the death rate from diarrhoea and enteritis under two years of age, averaged for the eight years, 1911 to 1918, inclusive, 63.9 per hundred thousand population throughout the registration states.

This is a higher death rate than occurred during the same period, including all ages, from all of the following diseases combined: Typhoid fever, 15; malaria, 2.4; smallpox, 9.2; measles, 9.8; scarlet fever, 5.2; whooping cough, 10.9; diphtheria and croup, 16.2, and poliomyelitis, 2.5, which total 62.2 per hundred thousand population.

In 1918 diarrhoea killed 2,880 times as many babies as hookworm did people of all ages; 320 times as many babies as smallpox did people of all ages; 902 times as many babies as rabies did people of all ages; and 14 times as many babies as pellagra did people of all ages.

These diseases have been subject to systematic study, health regulations, money appropriations and organized combat. Why not diarrhoea?

The profession and laity appreciate the value of State Health Laws in the fights against measles, scarlet fever, diphtheria, whooping cough and poliomyelitis, but these combined only kill 44.6 per hundred thousand population for all ages, as against 63.9 for diarrhoea under two years.

For the three years, 1916, 1917 and 1918, our three states returned, for diarrohea under two years, as follows, per 100,000 population:

North Carolina, 1916, 77.9; 1917, 79.4; 1918, 75.1; average, 75.4. Total deaths average, 2,040.

South Carolina, 1916, 71.9; 1917, 79.4; 1918, 75.1; average, 75.4. Total deaths average, 1,206.

Virginia, 1916, 66.1; 1917, 66.; 1918, 60.5; average, 64.2. Total deaths average, 2,041.

Total deaths for the three states averages 5,287.

That marked improvement can be brought about witness the following:

Maine dropped from 60.3 in 1916 to 39.1 in 1918.

Indiana dropped from 62.6 in 1916 to 47.1 in 1918.

Think what has been accomplished against yellow fever and typhoid when the profession combined against them in systematized effort?

Because of the very great possibilities of preventing the disease and of lessening its general mortality I believe this plea, for an organized effort to fight it, fully justified.

I can think of nothing which would awaken public sentiment and interest to a like extent as would the contagious disease placard, appearing suddenly in every section of the towns and cities this summer. It would stir up fear and awaken hope, in that the public would at once realize that the profession was aroused and on the job. It would teach them how very common the disease is, and that we realize that it is a dangerous and communicable disease.

If the Tri-State Association would request the several State Boards to make this disease reportable and placardable from May 1st to November 1st (the disease need not require quarantine) I feel sure that they would gladly do so, and co-operate in other ways. Then, if an educational campaign could be organized, with the assistance of the press, and the civic organizations of all towns, the few general principles relating to prevention and cure could be gotten before the public and their co-operation obtained.

To illustrate the possible benefits to be derived from preventive measures, let us go briefly into the etiology.

The predisposing conditions appear to be much more important factors than the exciting causes, and at the head of the list, almost to the exclusion of others, stands artificial feeding.

Holt says (1919, pg. 352): "Less than 5 per cent of the serious cases of diarrhoea are amongst the breast fed, and fatal cases amongst the exclusively breast fed are really rare, no matter how bad the surroundings or how ignorant the mothers." Think of what this statement means?

If over 95 per cent of these cases occur in the artificially fed, what an enormous reduction in incidence and mortality would result if we would, from today, discourage premature weaning and help mothers to prolong their nursing period. Dr. Jacobi, and other eminent authorities since, have said that nearly 100 per cent of mothers can successfully nurse their babies.

Of a total of 47,753 deaths under two years in the whole registration area, 36,807, or 77 per cent, occur during the first year, or nursing period, and would be directly affected if the mothers would co-operate.

Only 3,537 of these deaths during the first year occurred amongst the colored race. The white mothers stand for over 90 per cent of the loss.

It can be seen, therefore, that our foremost duty is to fight against the ever increasing prevalence of premature weaning.

This disease occurs almost entirely during the hot summer months.

If only 5 per cent of nursing babies are affected by hot weather against 95 per cent artificially fed, what is the relationship between the two great causes artificial feeding and summer heat?

City residence does not seem to cut much figure, for the statistics show that only 56 per cent of the deaths occur in the cities as against 44 per cent in the rural communities. The fact that the same hot weather acts on both breast-fed and artificially fed, and affects 95 per cent of the latter as against 5 per cent of the former, would suggest that the constitutional effect of artificial feeding was the main predisposing condition upon which heat, the chief exciting cause, acts.

Why can breast-fed babies stand up under the ill effects of heat, when the artificially-fed cannot?

Evidently their stamina, or power of resistance, is greater. Why? What constitutes resistance, and in what tissues or structures does it reside?

Physiology teaches us that the protein, or nitrogenous food principle, is the only one that adds red meat to our bodies and gives it resistance and strength; that the fats and carbo-hydrates produce heat and energy.

In hunting an answer to this, let us compare the diet of the majority of artificially-fed babies with that of the breast-fed.

By far the most popular baby food I meet with is sweetened condensed milk. It is comparatively cheap; is easily prepared; fairly clean, and obtainable everywhere; and it apparently agrees, that is, it doesn't immediately disagree, with most babies.

Mothers' milk has about 7 per cent sugar, and in giving condensed milk (or any other of the so-called baby foods which are all, in main, highly concentrated sugar preparations) we dilute them with water until their sugar per

cent is brought down to within safe limits, about 6 per cent to 7 per cent. This results in diluting the original fat and protein per cent, which was relatively low in the beginning, to away below the baby's needs, and we bring about a fat and protein starvation. It now has to feed upon its own fat and protein with resultant loss of vitality. It at first appears to do well, and puts on weight, due to the sugars binding the waters to his tissues, but gradually a water-logged state ensues, in which cross section will show very poor musculature with increase of fat everywhere, and he becomes weak and flabby, and eventually pale. Resistance is impaired, due to protein starvation, and they cannot stand any illness well, and are "knocked out" by hot weather, and literally wilt away from drainage of the water from their tissues.

This, to my mind, pictures the reasons for the prevalence of summer diarrhoea. One might almost consider it as a late sequel of malnutrition of protein starvation origin, brought on by hot weather.

Its prevention calls for maintenance of the baby's resistance during the winter and spring months through, first, maternal nursing, and secondly, if weaning must be done, the immediate placing of it upon a balanced diet, or one in which each of the food principles, fat, sugar and protein, is represented, plus fat and water soluable vitamins.

The same principle obtains in babies of the second year. Here the mothers, after stopping the breast milk, feeds the baby on potatoes, cream of wheat, bread, crackers, hominy, corn meal or other starchy food, and leave out of the dietary, fats and protein. They do not know what protein is; what foods supply it; nor of the absolute necessity of its presence in the dietary.

I venture the statement that to most of the laity, and to a few physicians, the word food means simply something to eat, and that the necessity of a knowledge of the differences between fats, sugars and proteins has never entered their minds.

It is distinctly the doctor's place to teach mothers these facts, as there is no one else to do it.

The only foods, aside from mothers' milk, which supply sufficient fat and protein, are cows' milk and meat. Therefore, until a baby is old enough to eat meat it must have cows' milk. At least one and one-half ounces, per pound body weight, per day. In the second year this may be reduced and supplemented to advantage by fresh vegetables which supply protein, and iron, which is practically absent from cows' milk.

Is there any way in which we can prevent or lessen the ill effects of the summer heat on these babies with lowered resistance?

What, if any, differences occur in a baby's environment during the winter and summer?

The housing conditions, as to ventilation and foul air from over crowding, should be better in summer as windows and doors are left open.

One thing that stands out prominently, as offering a possible means of relief, is the baby's clothing. Many, if not most, babies throughout their first year are enclosed in practically the same amount of clothing in summer as in winter, including the belly band and often the woolen shirt.

Clothing is worn to keep in the body heat and prevent its loss by evaporation, and not to keep out cold air.

In summer these too warmly clad babies perspire into the inner garments and we have added great humidity to the retained body heat.

May not this artificially retained humid heat be the cause of the severe reaction upon these babies of low resistance?

We are all familiar with the physical depression and lassitude felt during the summer in humid atmospheres, and know that these feelings are not experienced in dry, though as hot, localities.

The mortality for diarrhoea under two years in Kansas is only 28.5, and in Missouri only 35.6 per 100,000 population as against our 64 to 85.

Other predisposing conditions exist, but I do not think them of sufficient importance, compared to the above, to take up the limited time for their discussion.

Is the disease markedly contagious or infectious?

At first thought it would appear so, from the rapid progression through a locality, once the hot season with its effects on milk and food sets in.

Also, the swarming of flies that occurs at this time would lend to this view, and that contamination from the

stools was a direct, and most important, means of spread. Possibly so, but why, if the organisms in the stools are the direct exciting cause of the disease, are so many of the creeping, breast-fed, babies immune; and why do the two and three-year-old babies, who are in such intimate contact with cases, escape?

If a large majority of these cases were suffering from a bacterial invasion and toxaemia, would they clear up, as the majority of them do, in 12 to 24 hours upon the withdrawal of food and free giving of water?

You are all familiar with the return to bright consciousness, appetite and strength, which usually occurs, and is permanent, if purgative, opiate and starvation is not persisted in.

I do not belittle the influence of Shiga's, Flexner's, or other bacteria, but I do believe in the theory of Finklestein and others that these cases are primarily ones of dyspepsia and food intoxication, and that these prepare the field for the implanting and growth of the bacteria, which takes place several days later through mismanagement by purgative, opiates, and starvation or improper feeding.

Once the bacterial invasion has occurred, then the spread by contagion can take place by the same means as occurs in typhoid fever, or the three F's, feces, fingers and flies.

Here preventive treatment calls for the use of measures such as stool disinfection, food protection and preparation, thorough personal cleanliness of patient and attendant, and fly destruction and screening.

In the treatment of the disease the continued high mortality rate calls for a radical change from the methods of purge and opiate frequently repeated while mucus shows in the stools, and continued starvation, which have been handed down to us for the past hundred years and more.

The laity has been educated to this old method and generally gives it a thorough trial before sending for us, until the baby is desperately ill and our efforts handicapped.

We must teach the new conception of the disease; that it is a constitutional disease in which every tissue is malnourished, and that the dairrhoea is a local, life saving, symptom, by which nature is ridding the system of poisonous matter which, if retained, will kill the baby.

They must be taught that to give castor oil or other purgative is not needed if the bowel is already empyting itself, and that they act, and increase peristalsis, only through irritating the already irritated bowel, and themselves produce the mucus which so terrifies the mothers.

It must be explained to them that to check the discharge of the poisonous bowel contents will result in its absorption, with resultant toxaemia and its fever, unconsciousness and death. Paregoric and bismuth are harmful.

Equally important to explain is that the fever and mental depression are the only safe guides as to the state of toxaemia, and that as soon as these clear up the nourishment must be started, for, just as in typhoid fever, unless the strength is kept up by food, and there is no drug or anything else that will do this, the baby will rapidly consume his own tissues and die of starvation.

In other words there is no drug treatment for diarrhoea.

We of the profession are responsible for the laity's confidence in the nutritive value of barley water, albumin water, and panapeptone. We now know that these have too little food value to be even considered as foods when prepared in the routine ways, and unless we warn mothers they will continue their use and kill their babies.

The treatment of diarrhoea is preparatory and dietetic.

Preparatory consists in rest period of 12 to 24 hours, during which plain water is given if the reaction of the stools is alkaline, and of soda bi-carb solution, drams one to the quart of water, if the reaction of the stool is acid. In this time most every case, if seen early in the disease, will clear up, and now should start the dietetic treatment.

Again the reaction of the stool is a practical guide.

If acid, feed protein, as represented in skimmed cows' milk or protein milk, keeping the fats low as possible. Fat-free Bulgara milk also.

If alkaline, feed carbo-hydrates such as Horlick's Malted Milk, or Dextri Maltose, or lactose solution (7 per cent) inoculated with Bulgara Bacillus.

Remember that food tolerance for all foods is almost destroyed and go very slowly with food increase, take days to get back, during which their tissues are recovering. Let the bowels alone.

If true disentery is present don't feed protein as it nourishes the Shiga's and Flexner's organisms and their toxins are virulent, whereas, on carbohydrate these organisms don't thrive and their toxins are lowered in virulence.

If the gas bacillus is the predominating organism the Bulgara bacillus given in 7 per cent lactose solution is a specific, apparently.

As in typhoid fever, by maintaining the nourishment you help the baby to live through his illness and have strength left to convelesce, and that is all anyone can do.

It is easy to picture the great good that would result if every doctor would enter into an organized fight to check this yearly scourge, all working along some pre-arranged, agreed upon, plan of prevention and cure.

DISCUSSIONS.

By Dr. I. W. Faison, Charlotte, N. C.

Mr. Chairman and Gentlemen of the Tri-State:

This subject of mortality of children that Dr. Cornell talked about last night is worthy of your consideration. It ought to cause us all to wake up and act.

The main point, I take it, in his paper is to have placards put up for this kind of sickness among children. Unfortunately, he asserts that it is contagious. I don't agree with him in that thought. I think he ought to have gone far enough to say that placards ought to go up for colitis. I think it is well enough to use the word "colitis" because people are afraid of that word, but if you say "diarrhoea" or "running off of the bowels," they hear that so much it does not make much impression. But it is a fact that the mortality of children can be greatly reduced by reducing cases of colitis. Dr. Cornell spoke of the fact that milk and artificial feeding of children were the main causes of the most of these conditions, which goes a long ways to people who don't stop to think and of people who don't realize that.

I wish mildly to indict you medical men sitting here with being guilty in part for some of the mortality of these children with colitis. You would not ask a man as competent as Dr. Barker of Baltimore in his line to operate on a case of stone in the kidney nor appendicitis, still you say he has got all the brains one man needs in his sphere. You would not call on any medical man ever so competent in his medical profession to do that kind of work for you; but here comes a little helpless baby, sick with something that is going to kill him just as certain as appendicitis was going to kill the other fellow and still you play along with that little fellow and trust to Providence, and Providence don't have anything to do with it, so you trust on a broken stick when you do it. God Almighty intended that you should use the brains in your head to know how to handle these children and He holds you responsible. There is a belief among the medical men, as well as the laity, that He will protect these gentlemen in their weaknesses. All I want is to arouse your consciences sufficiently that when you get these cases and don't know what to do with them—and that is so in the most of them—that you will turn those children over to somebody that does know, or, at least professes to know. I know—and I am speaking from the book—when I say, I know men within the radius of my knowledge who treat children in these conditions, and not only in these conditions but other conditions, that are not prepared and ought to be ashamed of themselves for breaking over the line and doing such work for the sake of a five or ten dollar bill.

I came to this meeting to hear Dr. Cornell's paper and to help him bring it forcibly before you doctors and beg you to go forward and do what he has asked you to do. This sickness can be very greatly reduced.

I do—and I don't mean to talk about "Big I"—but I have done an immense amount of work in that line. I live in a town of about 50,000 inhabitants and during the year of 1920 in my personal practice among my people whom I have had in charge for twenty-five years, some of them, only one case of ilio-colitis developed within that year; and it is because I have taught the good mothers how to care for the diet and gen-

eral hygiene of their children; and when the children get sick, if their bowels move more than two or three times or if they vomit, two or three times in a day, to call me, not for the purpose of getting paid for that visit but to get them in time to save them from paying for ten, fifteen or twenty visits or the awful expense of a funeral procession.

In conclusion, I will ask this convention to stand by Dr. Cornell's request. Ask the health boards of the three states to put on the reporting list this dysentery disease and have placarded "Colitis."

By Dr. J. L. Ward, Columbia, S. C.

I should like to stress one point in connection with Dr. Cornell's paper—and I hope his paper will be discussed lengthily. That is the point of the importance of keeping children on the breast. The baby's birthright is mother's milk, not cow's milk; and it is unnecessary to mention before this audience the difference in the elements of these two milks. One is intended for the calf and the other for the human animal. The point I wish to stress is this: Recently there has been quite a bit of work done on the re-establishment of breast milk. Frequently, as Dr. Faison has stated, we physicians are responsible for mothers refusing to nurse their infants or of a mother who begins to nurse her infant and who for no other reason than that she wishes to attend bridge parties or the theatre or dances will ask the physician to tell her she is unable to nurse her baby and then the physician will assent to her desire. This, gentlemen, is a very serious problem when you realize that in a great many cases, if you do not insist upon the mother nursing her child —and any mother can nurse her child —you will sign the baby's death warrant. You are all familiar with the fact that the death rate among artificially fed babies, unnaturally fed babies, is from four to six times as high as among the breast fed babies, and, therefore, it is not stating the fact too strongly to say when you permit a mother to discontinue nursing her infant, you often sign that baby's death warrant. It is worthy of the most careful medical supervision.

The breast milk is the thing for the infant. Now, there are very few diseases which make it wise for the physician to advise the mother not to nurse the child. Perhaps there is only one—pulmonary tuberculosis. There are certain conditions, of course, where a woman is critically ill, in which the physician will think it advisable for her not to nurse her baby, at least temporarily. Now, even in these cases we can keep the breasts functioning properly so that when the time comes the baby can be put upon the breast, and in the meantime feedings of modified milk may be used.

Certain work has been done in France and Germany and England, and to a small extent in the United States, on the re-establishment of breast milk. It simply consists in having the mother empty the breasts at certain intervals—three or four hour intervals—not with the breast pump, but by stripping and in this way the breasts will soon functionate. It is necessary to grasp the breast between the thumb and forefinger just a little above the areola, press the fingers together and draw them forward, continuing the firm pressure between the two fingers and then pull the entire breast forward when the fingers are at the base of the nipple without making any pressure on the nipple. That is never necessary; the breasts will be emptied. If the infant is too weak to suck, he may be fed the breast milk from a bottle to which a sufficient quantity of modified milk may be added, if necessary. Not only this, but in some cases where the mother has not attempted to nurse the infant for four, six, or even eight weeks, the supply can be re-established and there are no more important things in pediatrics than this; and we physicians should certainly not consent to a mother's refusal to nurse her infant, if it is within our power to prevent such refusal.

By Dr. J. N. Upshur, Richmond, Va.

I think the gentleman who has just spoken struck the keynote when he said we should assist the mother to nurse her baby. Through a long professional life and the care of a good many children I have never entertained any discussion with the mothers as to whether they should nurse their babies or not. I tell them that it is not a question for debate—that they have to nurse them. My rule has been that as soon as a

mother was rested after the confinement that the baby should be put to the breast and should be put to the breasts at regular intervals so that by the time the secretion of milk comes that that breast would be broken. I have always gone further than that—I have commenced with mothers by the time they reach the fifth month, if I could get hold of them, and try to get them to take care of the nipple, trying to get that nipple so it would be easily available for the suction of the infant and also the care of it so that the covering over the end of the nipple would be sufficiently hardened to prevent the mother from having cracked nipples.

Now, I don't remember how long it has been since I have seen a case of ilio-colitis. In the early days of my profession in Richmond the month of June was a horror for mothers and doctors and the mortality was very heavy; and the cause of the whole thing was that we did not know how to feed the baby. The whole thing turns on the feeding.

Now, it is not every one that can nurse a baby because there are some women, in the first place who have an insufficient secretion of milk; some women who, for conditions back of it, don't secrete the proper milk that is going to be as nutritious as it ought to be. There are some women where we find the conditions of a leaky breast by the time the child gets to be three months old we have to put them on the bottle. But I lay down as an emphatic rule with my patients that they are not to feed their babies according to their own ideas of how they should feed them, but that they are to come to me regularly and get a formula for the proper preparation of the milk so that it will be digested and assimilated by the baby, and I have had very little trouble with babies in my practice. I go one step further with this condition. I give them as a fixed rule—if the baby has indigestion, diarrhoea or suffers with constipation to give it a good dose of castor oil, and send for me and don't undertake to manage it themselves, but for them to manage it in the way I tell them. In that way I have had very little trouble with them.

Now, one point more and I am done. I wish I had sufficiently pointed English to damn that idea that the fashionable mothers have got that they owe nothing to the children they bring into the world. There is no higher mission on earth than that of being a mother and the realization in a dutiful spirit of the blessing that the Lord gives us when he sends us children; and there is no more sacred thing to me than that the mother should nurse and care for the baby, and if her affection for it is not sufficient to make her nurse and care for that baby, then there is something that is very defective in her morally and I have no patience with these fashionable mothers who bring the little things into this world and then send them away to be attended to by some nurse. They don't care for them morally or physically when they do that; and one of the things the present day preacher has got to do is to imbed in the people a sense of delicacy and morality. The present day dress and the immorality that is rampant is lowering the standards of men and women. A layman said not long ago that he thought men were straighter than they had been before, but that the women were working for a single standard and that in doing so they were dragging it down.

Discussion Closed by Dr. Cornell.

The whole idea of my paper is a plea for organized action against summer diarrhoea which kills so many babies every summer, and I think I can best close by outlining what, to my mind, would be the simplest scheme of getting that organized action, rather than to speak in answer to the gentlemen who have discussed the paper.

To succeed we must reach and impress the general practitioner, for it is he who sees over 90 per cent of these cases and he who has the great opportunity of instructing the mothers.

As has been pointed out in the discussion, if a surgical opinion is desired you would consult a surgeon, therefore, when dealing with this disease of infancy, why not accept the opinion of the pediatrician?

My ideas as to an organized fight are as follows:

1. To get an official, trustworthy and modern conception of this disease. Request the pediatricians of the Tri-State Association to prepare a pamphlet on the disease showing statistics, etiology,

prevention and treatment, which would be accepted as an official bulletin worthy of respect. Distribute this bulletin to every practitioner in the three states with request that he follow its suggestions for a year, and that he co-operate with every effort made in the fight.

2. The Tri-State Association to officially request the State Boards of Health of the three States to make summer diarrhoea a reportable and placardable disease, and to request all doctors, when making out their reports, to state whether the infant affected is breast fed or being artificially fed and, if so, on what.

These reports to be compiled into statistics for publication and study, etc.

These statistics are necessary to a fuller knowledge of the disease and, coming from every doctor, would make available invaluable information in a year's time. Dr. Holt recently wrote me that there were no figures at hand, and that it would take many hours of work to compile them. I asked him for approximate mortality rate in summer diarrhoea from all causes, and what per cent of these cases were true dysentery?

We will have to secure our own statistics.

I think the term summer diarrohea best because it covers all the other terms like colitis, disentery, infectious diarrhoea, cholera infantum, etc., and if one of these were adopted many cases would not be reported because of delay and difficulty in making distinctions in diagnosis.

3. Because of their wide influence, and their great opportunities for reaching the public, I think the pamphlet, or Tri-State Bulletin, should go to every pupil and graduate nurse and to the workers in the child welfare organizations with request for their co-operation.

4. Solicitation of the co-operation of the daily press through publication of statistics from time to time as tabulated by city and state health officers.

Dr. Faison, by instructing the mothers in his practice to bring their babies to him immediately they vomit or have two stools, so that he can at once regulate their feeding, reduced the incidence in his practice last year to one case.

Think what this statement means? He, through education of the mothers, was enabled to see these cases while in the dyspepsia stage and before they became infected and passed into a true dysentery, and was able by properly regulating their diet, to save them the dangers of a dysentery.

I'll wager that the mothers in Dr. Faison's practice have been taught to supply protein to their babies when it becomes necessary to take them off the breast.

What he has accomplished can be duplicated by every doctor treating babies, if we can only get the matter properly before them.

This large job could be easily "put across" by the many, with expenditure of comparatively small effort from any one individual, and surely the end justifies the means!

Original Communications

OBSERVATIONS ON MENTAL ASPECTS OF PULMONARY TUBERCULOSIS.

By Louis E. Bisch, A.B., M.D., Ph.D.

A subject of which the scope is as large as the title of this paper has advantages as well as disadvantages of presentation. It is an advantage to have abundance and variety of clinical material from which to generalize and it is tempting to skim over the whole field lightly, indulging one's fancy in vague possibilities and probabilities without bothering to check up findings or to dicover whether what happens to be true of a particular case, also holds true of the general average. On the other hand it is rather disconcerting to find that really little more than this has actually been accomplished regarding the mentality of the tuberculous and that whatever data is available is singularly uncorrelated, divergent and often contradictory.

Here then is a disease that may claim the distinction of holding first place among the world's ravages of life, efficiency and happiness, yet its psychic mechanisms remain neglected and mysterious.

The writer makes no pretense of having correlated the conflicting opinions held about the mental aspects of pulmonary tuberculosis, neither does he make any pretense of having discovered anything new. However, the opportunity accorded him in Asheville of treating mental maladjustments in tuberculous individuals has brought home the importance of this side of the patient's symptom-complex and has crystallized the tentative supposition that despite multiplicity of symptoms, the mental aspects of phthisis have in all patients certain elements in common.

Time was when mind and body were not merely convenient divisions into which to parcel an individual for study but they were looked upon more or less as distinct entities that led independent existences and were comparatively little dependent one upon the other. Nowadays, however, psychiatrists realize the importance of studying the individual as a whole—the mind and the body together; the functional and the organic together. Even single mental traits are no longer considered apart and by themselves. They are and should always be considered in relation to other mental traits and in relation to the biological development of the individual as a unit not only from the cradle up (ontogenetic approach) but also from the viewpoint of his being merely a stage of growth in racial progress (phylogenetic approach).

And it is probable that this former narrow and one-sided way of trying to understand the mind is responsible for the many-sided opinions that are given by those who have recorded their observations concerning the so-called "psychology of tuberculosis."

Dr. S. A. Silk, of the Government Hospital for the Insane, at Washington, D. C., in his admirable paper on "The Psychical Changes Observed in Pulmonary Tuberculosis and Its Relation to Insanity" has included a most searching and condensed review of the literature on this subject. It is given here together with Dr. Silk's introductory remarks and shows so well that "the psychology of tuberculosis" is by no means a settled question.

"On reviewing the medical literature on the subject, one is amazed at the contradictory statements and ideas expressed by equally well-known authorities, as to the forms and causes of the psychical changes observed in sufferers from pulmonary tuberculosis. According to some writers, the changes are very few, but decided, while others mention almost every mental trait known to psychology. Some writers consider these changes to be directly due to the disease itself, while others consider them due to influences altogether outside of the disease. Some writers think that the toxemia or toxins of tuberculosis are specifically responsible for the above-mentioned changes, while others give them only a secondary place of importance as a causative agent and still others absolutely deny their

significance as an etiological factor in the production of the psychical changes observed.

"De Santos Saxe, who is quoted by many others, states that pulmonary tuberculosis produces such profound changes in the mental traits that it often leads to crime and insanity. Mental disturbances range from slight irritability of the nervous system to mania and melancholia. Early stages are manifested by neurasthenia, psychosthemia, hypochondriacal and hysterical symptoms. With the progress of the disease more distinct changes take place, the main characteristics of which are, 'loss of will-power and self-control, and ascendency to brute selfishness.' There is also present abnormal increased susceptibility to external mental influence, variability of temper, tendency to rapid psychical fatigue, change in sexual instinct, which, according to Gerhardt, is seen in the more frequent prevalence of venereal diseases in tuberculous individuals, due to increased sexual indulgence, and last but not least, tendency to crime. The above changes are all due to the tuberculous infection.

"Fishberg quotes Saxe, but his list is somewhat shorter; he states that 'Beginning phthisis finds expression (often before physical signs are demonstrable) in changes in character and exaggerated tendency to emotional disorders. They are absorbed in themselves, note the minutest changes in their symptoms, hardly speak of anything else, are optimistic.' He specially emphasizes great selfishness, disregard for others, and sexual eroticism.

"Kiernan and Alexander, in different papers, speak of the poet Keats' life, and emphasize such mental traits as irascibility, irritability, and great suspicion as all due to pulmonary tuberculosis.

"Maudsley (quoted by Clouston) states that persons of a strongly tuberculous diathesis and with a consumptive heredity exhibit a phthisical psychology —irregular mental brilliancy without balance, incapacity for continued mental exertion, a causeless change from hope to despair, a causeless suspicion at times. Tuberculous individuals show whimsical notions, mental unrest, vivid fancies almost amounting to delusions.

"Brock thinks the chief mental trait is neurasthenia; the nervous system is out of gear, due less to the physical condition than to the general moral environment—that they are being shunned by everybody.

"Milton thinks that the only characteristic mental symptom in pulmonary tuberculosis is the black despair common to the first stages.

"Letule thinks that in the early stages the intellectual aptitudes are sharpened in a singular way. Memory, judgment, finesse in reasoning, critical sense, all these mental reactions are placed in evidence in contrast to the physical forces which remain stationary and shortly decrease. As the disease advances mental peculiarities undergo changes. Brain work is performed by fits and starts, there is over-excitability. Moral defects of the consumptive, whether hereditary or acquired, are exaggerated, never alienated. Sadness is imprinted. The predominant feature is egoism. He does not think that the mental traits per se change, but the patient simply shows himself in his true color. The "toxemia" robs him of the sense of proportion. In his instinctive desire to live he cuts loose from all ethical and conventional precepts.

"According to Gubb, tuberculosis produces intensification of cerebral functions according to temperament. Under its influence the artistic and imaginative faculties are often stimulated. He quotes Mauclair, 'who instances Watteau and a number of other great men, as Schubert, Chopin, Verlaine, Heine, Mozart, and others who died of pulmonary tuberculosis, in whom the tuberculous infection seemed to have developed their faculties to a previously unattained brilliancy.' He concludes by saying that the physiological influence of phthisis merely accentuates the natural predisposition to idealism.

"Carncross, who attempted to study this question in a scientific and statistical way in the dispensary and hospital of the Henry Phipps Institute, believes that the psychological changes are due to chronic illness rather than to tuberculosis specifically. Definite morbid psychological states usually occur in the later stages; the patients are morose, very irritable, quick to suspect, ready to find fault, perverse, antagonistic, almost abusive, skeptical, open to suggestion temporarily. Only the above, however, are observed in individuals who are self-willed rather than cheerful, good natured, and of yielding temper.

"Guy A. Fitzgerald states there are no changes in the mental or emotional characteristics in patients during the pretuberculous or initial stages. He states that tuberculosis is more apt to attack the weak, nervous and degenerate types, who often have an hereditary predisposition to insanity or nervous disease, and these will often show changes in the emotional and intellectual fields, but these changes are certainly not due to tuberculosis or its toxins. The ranks of the tuberculous among the better classes are recruited mostly from the hard-working, ambitious, nervous element, among whom are found the keenest minds and brightest intellects, in whom no sign of emotional or mental aberration can be demonstrated. According to him it is a fallacy to regard the tuberculous as selfish and unmindful of the comforts of others (this may be observed at times in the last stages), but various peculiarities may have existed before the disease and passed unnoticed.

"He states that the loss of will-power and self-control emphasized by some writers is noted late in the disease—the true character comes to the surface, but it is not due to the disease or its toxins acting on the nervous system, rather to the throwing down of barriers and to the failure of the person to restrain himself as he has no longer any special goal and is indifferent to social opinion. He disagrees with the other writers that the tuberculous patient is optimistic or shows impulsiveness, deficient energy for work, vacillation or obstinacy, or that he is more irritable, emotional, or excitable. According to him the sufferer from tuberculosis is as brave, unselfish, and devoted to high ideals as the average man. He quotes Dr. Knopf and his report of the action of the patients at North Brothers Island during the Slocum disaster. Sick patients rushing into the water and working side by side with attendants to save lives. Depression and melancholia are due to the attitude of the healthy friends who shun and avoid him, and the timidity and desire to avoid society are due to consideration for others and the dislike of pity and not to pathological causes.

"Burr thinks that the hyperexcitability in early stages persists in latent cases during life and may be accountable for a heightened mentality. He mentions the life of Robert Louis Stevenson, who was free from any pathological tendencies and whose cheerfulness and unselfishness persisted to the last minute. He does not think that the tuberculous patient is especially selfish or egotistical. Selfishness, egoism, and vicious tendencies are common to a large portion of humanity."

Far from being a psychology or scientific system on the mental aspects of pulmonary tuberculosis, this literature points merely to an enumeration of symptoms, character traits, and mental peculiarities without any special attempt being made to correlate one with the other or of giving any clue as to the real causative agents that may be at work in their production.

If we accept without further proof that all or nearly all tuberculous patients present psychic peculiarities, and if we disregard for the time being the diversity of opinion as to the mental traits they show, the question which naturally presents itself is what there may be in the inherent nature of the pathology of tuberculosis to cause psychological changes. The toxemia theory has been offered in explanation.

Here again, permit me to quote from Dr. Silk's paper:

"The 'tuberculous toxemia' theory is neither logical nor scientific. The various mental traits and changes in character supposed to be due to tuberculosis are often shown by the authors upholding the 'toxemia' theory to have been manifested since childhood and to have existed a great number of years; and while we admit that the tuberculous process often begins in childhood, and is only reactivated in later years, we certainly do not admit that there was a toxemia during all those years.

"Saxe, in proof of the 'toxemia theory,' quotes Dufour and Dide, who found that in three out of ten patients receiving tuberculin treatment, they were able to evoke headache, delirium, and other cerebral symptoms by injecting what is now considered excessive doses of tuberculin. The line of symptoms produced in these patients indicated conclusively (!) that the mental symptoms of tuberculin were toxic in origin.

"If we should assume that there is a special toxemia in tuberculosis it must, of course, manifest itself by certain symptoms, such as headache, slight fe-

ver, increased pulse, etc. We know, however, that tuberculosis, which often lasts many years, shows such symptoms for only a very short time, which would indicate that in the interval there was no toxemia; then the mental traits, if caused by the toxemia, should disappear just as the fever, rapid pulse, etc., disappeared. The researches of Vaughan have shown that certain body reactions known as "toxic" do not depend on any specific agent; that they are reactions on the part of the body against a foreign protein of any kind, and Crile has shown that the same reactions occur when the body reacts against any injury, whether real or psychic representations of one, such as fear. This, of course, is noted clinically; the patients coming up for an examination when they are afraid that their disease is progressing frequently show a rise of temperature, rapid pulse, headache, etc., though they were free from them previously and these promptly disappear when the physician assures them that their disease is becoming arrested or cured. The toxic symptoms following injections of tuberculin—or "reactions," as they are called—are in no way different from those caused by injection of any other vaccine, and injections of water are often followed by similar reactions.

"That the changes in the mental traits are not due to the disease itself, but to the new adjustments the individual is forced to make, is illustrated by cases which are discovered in the far advanced stage where the disease has progressed so slowly that the patient never suspected it, in which case no change of mental traits were ever observed. It is known, however, that the mere fear of tuberculosis where there is no actual disease produces marked changes in the mental make-up of the individual. I venture to say that if 100 healthy individuals could be made to believe that they are suffering from pulmonary tuberculosis they would show similar changes, and there would be as many variations in the mental traits as there were actual sufferers from the disease.

"Carncross questioned 237 patients at the Henry Phipps Institute, the majority being those coming to the dispensary for treatment, with a view of determining disposition and changes in the mental traits of those suffering from tuberculosis.

"The following interesting data were obtained: One hundred and thirty-five were of a cheerful disposition; of this number 42 became less cheerful with the advent of the disease; 22 were unhappy; 29 were intermediate; 31 not recorded; those originally pessimistic became more so.

"Among the 237, 30 were non-tuberculous, 148 showed some change in disposition; 18 were non-tuberculous; 58 showed no change; 5 were non-tuberculous; 31 not recorded; 7 non-tuberculous. The most common change was the birth and growth of irritability; 109 confessed to irritability, among them were 11 non-tuberculous.

"Mental Attitude—166 were hopeful, among them 16 were non-tuberculous; 32 not hopeful, among them 4 non-tuberculous; 1 was indifferent; 38 not recorded, 1 non-tuberculous.

"Depression—66 were depressed most of the time, among them were 6 non-tuberculous; 49 at times, among them 10 non-tuberculous; 14 seldom, 1 non-tuberculous; 71 not depressed, among them 6 non-tuberculous; 43 no record, among them 7 non-tuberculous.

"Suspicion — 10 were suspicious, among them 2 non-tuberculous; 184 were not suspicious, among them 20 non-tuberculous; 43 not recorded, among them 8 non-tuberculous.

"From the above we see that among non-selected tuberculous cases showing various changes in mental traits, the same were found almost in the same percentage among those who 'believed themselves' suffering from the disease, where there was no actual disease, and hence no 'tuberculous' toxemia was present."

Returning now to the multiplicity of mental traits reported, is it true that tuberculous patients present a greater diversity of such symptoms than the non-tuberculous do, and secondly, is there anything in the psychology of these symptoms that is peculiar to tuberculosis and to no other disease?

As to the first, we do not believe that tuberculous individuals show a greater variety of symptoms, nor are they greater in number, than one may observe in almost any case which presents itself for mental examination,

provided a thorough history is taken and searching questions are asked by the examiner. It is true of every mental case, whether it be tuberculous or not, whether the disease process be active or "closed," or whether it be a purely functional case with no organic lesion discoverable anywhere in the body, that they never tell you all the symptoms voluntarily. One says that he is tortured by some fixed idea that he cannot rid himself of—let us say suicide; another complains of insomnia; another reports a fear that he will never be entirely cured; still another claims extreme weakness and inability to work. Yet one and all have additional symptoms hidden somewhere which they do not reveal. They do not tell them off-hand either deliberately, because they are afraid their diagnosis will spell insanity, or they do not confess them because one or a few of the symptoms dominates everything, completely usurps conscious attention, and the rest are belittled and relegated into the hazy outer fringe of consciousness or, indeed, suppressed below the levels of consciousness into unconsciousness itself. Therefore a jogging of the memory and intelligent, leading questioning should always be followed in history-taking.

Next, let us see whether the mental symptoms found in the tuberculous show any characteristics peculiar to the tuberculous themselves. Here, again, we find the subject best synthesized by Dr. Silk, from whose researches we quote:

"The one mental trait which I wish to emphasize and which is present to a greater or lesser degree in all individuals predisposed to or actually suffering from pulmonary tuberculosis is fear of the disease and its result—death. Anything that produces nervous exhaustion lowers the vitality of the individual and renders him susceptible to tuberculosis. Fear is a potent factor in producing both. Sherrington states that each individual at any given moment has a limited amount of dischargeable nervous energy. This energy is at the disposal of any stimulus which occupies the nerve paths, resulting in the performance of an act. Each discharge of energy is subtracted from the sum total stored energy, whether the subtractions are made by the excitation of nociceptors, by trauma, by tickling, by fighting, by "fear," by flight, by excitation of sexual receptors, or by any of these singly or in various combinations; if the sum total of the spent energy is large enough, exhaustion is the result. Apparently there is no distinction between that which is due to discharge of nervous energy in response to trauma and that due to other causes.

"Crile, in his paper on the origin of emotions, tells us that fear is the psychic representation of injury, and as fear was created by trauma, it, through phylogenetic association, is manifested by reactions similar to those present in response to injury, causing discharge of energy, often leading to complete exhaustion. During fear all functions of the body requiring expenditure of energy and which are of no direct assistance in an effort toward self-preservation, are suspended. Fear or trauma may drain to the last drop the dischargeable nervous energy and therefore the greatest possible exhaustion may be produced by either.

"For centuries tuberculosis has been considered and still is considered by some an incurable and fatal disease. The fear experienced by the individual whether when he imagines he is suffering or is actually suffering from the disease, produces a constant drain upon the dischargeable energy, diverting it from other paths as the gastro-intestinal, causing various gastro-intestinal disorders, and through the law of summation of stimuli produces nervous exhaustion, rendering the individual not affected with the disease more susceptible to it and leading in those actually suffering from it to a more rapid and fatal termination."

The writer's experience has been the same, namely, that all tuberculous patients are haunted by a dread fear—a fear of incurability, a fear of diminished efficiency even if cured, a fear of a recurrence of the disease, a fear of the shortening of the life-span; and finally, permeating and underneath all these fears lies the biggest, most dread fear of all—death.

The hopefulness and cheeriness of these sick has frequently been reported. In fact, the term "spes phthisica" has been allotted to it. Personally, we do not think that this is exactly a mytn. Many patients do show surprising optimism despite the seriousness of their condition, but this is only apparent and on the surface. It is what analysts call

a "defense reaction." When we dare not face a true fact consciously we try to forget it—we suppress it into the unconscious—and we accomplish it and keep it suppressed by continually telling ourselves that the opposite is true. As a matter of fact, all individuals, whether healthy or tuberculous, have an instinctive dread of death, and all sorts of taboos and rituals have been invented by society to relegate this fear into the background as far as possible. The savage dreams of his "Happy Hunting Ground;" the oriental of a hereafter where joy and festivity reign; the Christian conceives of death as the surcease of all earthly woes and tribulations—a balm of resignation, as it were, for the inevitable. In the tuberculous the probability of death is more imminent, hence his fear more acute. If it is not apparent, analyze for it and it can always be found suppressed and disguised somewhere in the unconscious.

On the basis of this fear of death many neurotic symptoms can be explained.

A patient of mine, with a closed tuberculous lesion, persistently refused medication at night, although she did not mind so much taking it during the day. This applied to all medication whether stimulating or sedative. She could not understand why ,if her condition was a neurosis and her lungs healed, anything should be given for the body. Analysis showed that what she fundamentally believed but dared not admit to herself was quite different. She was afraid medicines might stop her heart and she would die.

Another patient insisted she had tuberculosis, although several experts had declared her lungs absolutely negative. In this case she unconsciously wanted to die in order to join a former lover who had succumbed to tuberculosis. The symptoms she came for treatment for were a fear of railway tunnels and all closed places ("claustrophobia")—all symbols of the grave.

What has impressed the writer is the tendency of so many tuberculous neurotics to have their chest examined and re-examined even when they never had a definite lesion and were only "suspects." This reconfirmation of previous findings is nothing but an unfulfilled wish for death. They really want tuberculosis so as to put an end to some intolerable situation in the present world of reality.

One such case insists she has tuberculosis, in fact she fears infection of all sorts, washes her hands many times a day and will not wear certain garments because she wore them in Asheville where tuberculous persons walk the streets. Analysis reveals that she is engaged to a man whom she feels is so devoted and honorable that she cannot very well refuse him. However, as a child, she always had a different type of man in mind—a successful business man with a fine education and plenty of money.

We may say then that there is no definite and universal type of mental disturbance that invariably follows or is synchronous with the organic lesion. In other words, although many patients show well marked and classical neuroses—anxiety types, compulsion types, neurasthenoid reactions, hysterical syndromes, etc.—these neuroses are not peculiar to the lung disease and, in fact, they may have antedated it.

In some cases the advent of tuberculosis seems to precipitate or start off an underlying and developing neurosis. But here, again, some other disease—typhoid, for example—would have produced the same results. The general cellular resistances of the whole body, mind included, are lowered sufficiently through the toxemia to bring to light other places of lesser resistance.

As stated previously, all tuberculous subjects can be analyzed and proved to be suffering from some conscious or unconscious fear of death either in an actual or symbolized form. If the mental symptoms are more marked than that, if a well-defined neurosis can be diagnosed, one finds in these patients the same hereditary neurotic taints, the same fixations of mental and emotional development, the same infantile wishes, and all the rest, that goes with neurotics than never had tuberculosis.

As to the reasons why tuberculous individuals always suffer to greater or lesser degree some change of mental traits the theories of psychoanalysis have interesting and valuable explanations. Perhaps cursory review of the main hypotheses would not be amiss here.

Every person has within himself a certain something which keeps him going—which activates and urges him on

from the time of his conception "in utero" until his death. Call this energy, if you will. At any rate it is instinctive and is present in all.

As applied to human beings the psychoanalysts call this something the "libido." The libido may be divided into four main groups: the nutrition libido, the reproductive libido, the self-defense libido and the ego libido. There are many other kinds of libido but all may be classified under these headings.

Now the individual's growth and development depends upon the expansion of his various organs working in harmony upon the fulfillment of his libidinous energy. If he is successful, adjusted and happy, it means that his entire libido has conquered or harmonized with the environment about him—the "world of reality." If his libido has been thwarted in any way, this thwarting becomes unbearable to consciousness, and suppression takes place with consequent alterations of character traits, and even physical traits, in order to compensate for the defeat or insufficiency which has affected the entire body and psyche.

White in his "Mechanisms of Character Formation" speaks of a case reported by L. F. Barker which brings out nicely a thwarting of the reproductive libido and the compensation which the psyche made to the organ inferiority which was responsible.

"This patient has rudimentary sexual organs, he had never had sexual feeling nor had he been able to effect intercourse. His general physical make-up was suggestive of the female sex, namely, scanty hair, excess of breast tissue, broad pelvis. As a result of the criticism of his associates of these feminine characteristics he said that he had made many efforts to do 'manly work'—and, as a matter of fact, always had done hard muscular work. He had been a cowboy, a sailor, a soldier in the Boer War, and was a boiler-maker at the time he applied for treatment. . . . . The inferiority, which had the effect of preventing the development of the sexual characteristics that properly belonged to his sex—in general, masculinity—had the effect at the psychological level of producing conduct calculated to compensate for the lack."

Thus, also, do we find psychic compensations in individuals with diseased lungs and these compensations are the changes and peculiarities of mental traits commonly observed.

For purposes of clarity in this connection we may think of each organ of the body as possessing a striving energy for growth and adequate functioning of its own, in other words, a libido. In the case just cited, the gonads were inferior, hence the thwarting of the reproductive libido, and hence the compensations. In the tuberculous what might be called the "respiratory libido" is thwarted because of the pathology existing in the lung tissue.

A thwarting of the respiratory libido not only effects other organs like the vascular system but it also effects the psyche. Since, as White says, "the psyche is the switchboard where each organ, each function, finds its final representation" most of the compensation takes place there. On this theory no tuberculous patient could possibly escape compensatory reactions in change of mental traits.

To quote from K. Stanley Hall:

"In the effort of the psyche to foster the important organs and functions which it selects for its special care, organic defect may be compensated by excess of nervous activity. Indeed, most compensations are in the psychic though not necessarily in the conscious field. No one is perfect, and hence compensation is necessary for all. The existence of sub or abnormal organs or functions always brings Janet's sense of incompleteness or insufficiency, and this arouses a countervailing impulsion to be complete and efficient which those to whom nature gave lives of balanced harmony do not feel. The ideal goal is always to be a whole man or woman in mind and body, and this may crop out in the childish wishes that are sometimes fulfilled in dreams, in the ambition of the boy who aches to be a man, and in general in the desire to overcome all defects and to evolve a full-rounded, mature, powerful and well-balanced personality. To illustrate, each bilateral organ compensates for defect in the other, one sense for another like touch for sight in the blind. Mozart had an imperfectly developed ear; Beethoven had otosclerosis; Demosthenes stammered and, as if mythology had recognized this law, many of the ancient gods were defective. Odin had but one eye; Tyr, one hand; Vulcan was lame; Vidar

dumb. So, too, the ugly Socrates made himself a beautiful soul. A man with a weak digestion becomes a dietetic expert in battling with fate. Little men walk straight; tall men stoop. Handsome men are superficial. A subnormal eye intensifies the visual psyche. In the effort to control enuresis due to renal insufficiency over-compensation may predispose to even dreams of water. Conversely compensation has its limits and when it breaks down we have anxiety, the most comprehensive of all fears and the alpha and omega of psychiatry."

When the brain partially succeeds in establishing a compensatory system to tuberculous invasion, mild mental peculiarities are noted. When the brain fails more signally, neuroses and psychoses result. The fact that the inferior organ is the lungs may color the type of compensation or failure of compensation. However, such differences in general symptomatology are not significant. As an aside it may be added that Adler believes all neuroses can be demonstrated to have as their basis some organ inferiority even if such inferiority be only relative and not apparent on the surface. His views emphasize the importance of treating the body as a whole—as a biological unit.

Unfortunately, time and space do not permit the writer to cite any psychoanalyses made upon tuberculous subjects. A single analysis would fill more pages than the whole of this paper put together, while abstracts would tend to be misleading and unconvincing. Suffice it to say that in the opinion of the writer the psychoanalytic method offers more hope of understanding and unravelling the maladjustments of these patients than any other now being used in psychotherapy.

Unfortunately, too, the limits of the paper forbid a consideration of the psychoses that are found associated with tuberculous individuals. It may be said, however, that there does not seem to be any special form of insanity peculiar to tuberculosis.

As Silk concludes, "Though pulmonary tuberculosis is not responsible for the many psychical phenomena observed in sufferers of the disease, the psychological side of the patient should not be neglected. The patient's difficulties must be studied carefully and a way of removing them as far as possible must be found, as their presence, and especially that of fear, under which the patient may labor, saps his vitality so necessary to the system in order to defeat the disease."

In closing this paper we beg leave to summarize the situation as we understand it regarding the mental aspects of pulmonary tuberculosis by quoting Jelliffe and Evans in their essay on "Psychotherapy and Tuberculosis," which appeared in "The American Review of Tuberculosis," September, 1919:

"The neurotic side of tuberculosis has impressed some writers so deeply that they look upon the strengthening of the self-control or psychic energy as important for the physical rehabilitation as the food, rest, and fresh air therapy. Although psychotherapy is given such an important place in several sanatoriums, the physicians in charge sometimes do not seem to know or recognize the unconscious conflict exhausting the patients' energy; and they approach the subject from an entirely different point of view, some working with suggestion, others with more physical means such as exposure to hardships, etc.

"The depressing effect of the inhibited emotions upon physiological activity has been well established, and it should be the duty of the physician to improve metabolic changes through psychical control as through physical. While the chronic toxemia of tuberculosis irritating the nerve cell and producing general disharmony in the cellular activity, so also is a depressed emotional condition disturbing to cellular activity. In a psychoanalysis patients are able to see that these emotional disturbances result in a weak attitude toward life. . . . . Psychoanalysis cannot change the physical results which are produced by the tuberculous process, but it can greatly improve the functional activities and the physiological processes by relieving the patient of the great drain on his nerve energy . . . . . ."

Conclusions.

(1) Multiplicity of mental symptoms recorded in pulmonary tuberculosis are often divergent and contradictory.

(2) Body and mind should be treated as a biological unit—one reacting on the other and both inseparately correlated.

The chronic toxemia of tuberculosis exhausts nerve centers and the latter, in turn, makes tuberculous process worse.

(3) The "toxemia theory" does not explain certain neurotic aspects of tuberculosis nor is there anything inherently peculiar in the pathology of tuberculosis because the same mechanisms are found in persons who never had tuberculosis or, in fact, never seem to have had any organic disease at all.

(4) All tuberculous patients have certain mental maladjustments in common. They depend, for the most part, upon the fear of death, besides other complexes resulting from thwartings of libidinous energy in the world of reality causing suppressions and symbolizations of such in the form of various neurotic symptoms.

(5) In some cases the advent of tuberculosis probably precipitates an underlying neurosis. Looking back even further, the lungs probably always were inferior although not showing actual symptoms. Here heredity and developmental predisposition plays a part as in all neuroses.

(6) The change of mental traits observed in tuberculous patients is not due to the disease itself but to the new adjustments which the disease forces the individual to make. The resultant of these forced changes produce the symptoms. It is often largely a matter of psychic compensations to organ inferiority.

(7) The psychoanalytic method offers more hope of understanding and unravelling the maladjustments of these patients than any other now being used in psychotherapy.

(8) Since all cellular activity—especially as regards fatigue and exhaustion phenomena—is so absolutely interdependent, by adjusting the patient's mental conflicts the pathological processes in the lungs is benefited.

(9) A plea that in the treatment of pulmonary tuberculosis the mental aspects should never be neglected.

The next annual meeting of the North Carolina Medical Society will be held at Pinehurst, N. C., April 26-27-28.

The Health Officers' meeting will be April 25.

THE ECONOMIC VALUE OF PRENATAL WORK TO THE COMMUNITY*.

By John Osborn Polak, M.D., M.S.C., F.A.C.S., of Brooklyn, N. Y.

The public has begun to recognize that there can be efficiency in medicine, as well as efficiency in business; and that it is good economics to keep the people well.

In order to accomplish this we are spending millions of dollars to regulate our water supply; we inspect and regulate the sources of our milk supply; restaurants have to be registered and inspected; our oyster beds are protected from sewage; while in all large cities the school children are regularly examined for contagious disease, to prevent the spread of the exanthemata. Typhoid, typhus and other intestinal diseases due to food polution are almost unknown, and a continual propaganda is being waged against tuberculosis. Suitable sanitaria have been erected, and there is a great furor as to the dangers of communicating tuberculosis. While all this is most creditable, and has produced most gratifying results, until recently there has been no concerted effort on the part of the public to limit the devastation which results from venereal disease; and practically nothing has been done to improve the birth rate or diminish the fetal mortality, or the maternal fatalities resulting from childbirth.

We feel that the time has come for us to face these facts, and realize that these social conditions exist, and that the physician and public must co-operate in an educative campaign for the public good.

It is one of the purposes of this American College of Surgeons to prevent the needless operation by making the preoperative diagnosis more perfect, and discourage the "look and see" method of operating and making of diagnosis. Have you ever thought that over four-fifths of the operations done on women are directly or indirectly due to infection at marriage or injury or infection during childbirth, and can therefore be prevented?

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*Address at public meeting in Charlotte, Jan. 20, 1921.

It may surprise you to know that the majority of all of the diseases which are peculiar to women are a result of infection. This is either conveyed to the woman during her childbirth or to her by her husband, as a result of an uncured gonorrhoea. Not more than 20 per cent of men who have gonorrhoea are perfectly cured and yet, through their ignorance as to the consequence of infection, they marry and infect their wives. Could we eradicate gonorrheal infection in married women, we would save 50 per cent of the operations done in our clinic.

Oppenheimer found the gonococcus to be present in the vagina in 27 per cent of pregnant women. This means that twenty-seven children out of every hundred ran the chance of infected eyes and blindness, and that twenty-seven women out of every hundred would suffer from secondary sterility.

In France, where the statistics have been accurately compiled it has been found that of about ten million families, making up the total population, two million were without issue. These results interpretated by Neisser and confirmed by our own observation showed that gonorrhoea was the causative factor in one million or one-half of these sterile marriages.

Placed at a low estimate, gonorrhoea may be said to cause more than 20 per cent of the blindness of the world.

In our own country, according to the census of 1910, ophthalmia neonatorum, or infant blindness, was the cause of 25.2 per cent of all of the blindness in the United States.

From the statistics of the committee on venereal prophylaxis of the Washington Medical Association, we find that 80 per cent of all men in large cities have had gonorrhoea one or several times, and that nearly 50 per cent of these men infect their wives.

Some idea of the actual frequency of venereal disease is furnished by Hepburn in his report of the city of Baltimore during the year 1905. During this year 3,090 cases of venereal diseases were treated by physicians in private practice and 6,393 cases in the dispensaries. During the same year there were treated in the city of Baltimore 575 cases of measles, 1,172 cases of diphtheria, 577 cases of scarlet fever, 175 cases of chickenpox, 58 cases of smallpox, 733 cases of tuberculosis, making a total of 3,310 cases of infectious diseases against a total of 9,553 cases of venereal disease. In other words, there were nearly three times as many cases of venereal disease treated in Baltimore as of infectious disease.

In the city of New York—of course, we don't expect much social purity in New York—in 1910 there were treated, in round numbers, 41,000 cases of infectious disease as against 243,000 cases of venereal disease. In other words, there were six cases of venereal disease to every one of infectious disease.

The man with scarlet fever, or with smallpox, is confined to his house, not only because of the severity of the disease, but at least by law, during the period of his infectiousness—gonorrheics and syphilitics, on the other hand, are allowed to mingle with their fellow men and women, infect them, and so establish a sort of endless chain of infection. Yet, with these facts before us, what concerted effort has been made for the prevention of this serious social condition.

The syphilitic or the gonorrheic is a source of danger to society, an economic loss to society and a danger far greater than that which accompanies individuals who are affected with ordinary contagious diseases, yet he is given absolute social freedom.

Another field of preventive medicine, which has had little or no attention from the public, is the pre-natal care of the prospective mother. Pre-natal care is the right of every prospective mother just as being well born is the inherent right of every child, yet thousands of children are born every year affected with syphilis—the syphilis of the innocent—and either die in infancy or live with their physical handicap which lowers their resistance as well as their economic value.

Williams states that over 40 per cent of still births are due to syphilis. In our clinic, where a routine Wassermann is made on every prospective mother, and where every syphilitic, no matter at what stage of pregnancy she is when she presents herself, is given intensive Salvarsan treatment, we have reduced the still births to less than 2 per cent. We have been able to accomplish this largely through the generosity of the American Red Cross, who has furnished us with sufficient money to follow up

our cases and supply Salvarsan to all who could not afford proper medical attention. This is only a sporadic effort, a drop in the ocean, but it shows what can be done.

Gonorrheics have smaller children than healthy women. Their initial loss in weight is greater and their subsequent gain is slower. While gonorrhea occurring in later months of pregnancy is a cause of prematurity, hence such children have a smaller margin of reserve strength.

In our clinic at the Long Island College Hospital, a routine bacterial examination of the discharges of every applicant is made and when the gonococcus is demonstrated, proper treatment is instituted, and thus the child has less chance of eye infection and premature birth.

Toxemia in the mother is another cause of still birth, second only to syphilis and poor obstetrics. Here again prenatal care can and does reduce infant mortality.

To give you some idea of what can be obtained by pre-natal care and the reduction of fetal mortality, we will analyze our last five thousand cases. Nine hundred and thirty-eight of the applicants did not have the routine pre-natal care throughout or refused regular treatment. In this number there were 11.5 per cent of still births, while 4,062 were watched throughout their latter months of pregnancy and received Salvarsan where their Wassermanns were positave; taken into the hospital when there was a complication or difficulty in their labor and the resulting fetal mortality was 3.6 per cent.

In other words, nearly 8 per cent of children were saved by pre-natal work, not to speak of those who would have died had they not had Salvarsan treatment.

It may surprise you to know that the maternal mortality in obstetrics has not been reduced in the last twenty-three years, while medicine and surgery have made marked advances and have, by these advances reduced the mortalities. Child birth is still attended with a high maternal mortality.

The medical schools are turning out better men, giving better obstetric instruction, yet their clinical facilities are altogether inadequate to give proper instruction to their large number of graduates.

Again, largely due to the apathy on the part of the public, there is no encouragement to the profession to do better obstetrics. The public insists and persists in employing the general practitioner, instead of the specialist in obstetrics. They fail to appreciate that mid-wifery is a specialty and should be paid for in proportion to the responsibility assumed. A surgeon operating for appendicitis only assumes the responsibility of one life, the obstetrician is responsible for two, yet the public will pay from $250.00 to $5,000.00 for an appendix and consider $100.00 as exorbitant for an obstetric fee. Every large community needs a maternity hospital and a pre-natal clinic where up-to-date obstetrics may be taught and done.

Dublin in his exhaustive statistics prepared for the Metropolitan Life Insurance Company, in an analysis of 14,000,000 women in the United States, found 10,000,000 of child-bearing age, and of the recorded deaths from all causes, 68 per cent was due to diseases relative to childbirth. Of this number, 43 per cent were due to infection, childbed fever, 26 per cent to eclamptic convulsions, so that 69 per cent of all of these deaths were preventable by prenatal care and better obstetric procedure.

From the records of the Board of Health of Brooklyn, one mother dies in every 250 births, while in the registered areas of the United States, one mother dies in every 180 deliveries, and yet labor is considered a physiological process and pregnancy entered into fearlessly because of ignorance.

In 5,000 deliveries in women who have had pre-natal care, we have had four deaths as a result of confinement. Such an array of facts show that something must be done by the co-operation of the public and the profession to check this economic waste of life. You say, what first, by educating our sons and daughters as to the dangers of venereal disease and the effects on their children. Second, by the more general inauguration of the pre-natal clinic. Third, by the establishment of maternity hospitals where obstetrics may be taught and better obstetrics may be done.

HOSPITAL UNIT "O."

By Addison G. Brenizer, M.D., Charlotte, N. C.

On April 27, 1917, three weeks after war was declared, the organization of Hospital Unit "O" began at Charlotte, N. C., on the appointment by Col. Jefferson R. Kean, M. C. U. S. A., through recommendations by Dr. J. M. T. Finney and Joseph H. Bloodgood, of Dr. Addison G. Brenizer as director of the unit. By June 12, 1917, the unit was fully organized and recognized by the War Department as Hospital Unit "O."

We were not hurried away to France.

A month later, in July, the doctors were changed to officers in the United States Army, the nurses and enlisted men were not mentioned.

Receiving a commission, though a noble thing in itself, and receiving a commission with right to serve and receive pay, that is with all appurtenances, are two quite different things. We had the commissions to be sure, as attested to by a great scroll of parchment which said as much, and then, too, we had accepted it for what it was worth. Moreover, as evidence of good faith on our part, we had sworn away our young lives and promised to stick it out to "the end of the emergency" or to a time, a very indefinite time ,determined by the "discretion of the President."

We knew also by these signs that we had rank; after all was said we had rank and some of us even had clothes to display it, but couldn't wear them.

There was much talk and a unanimous vote of all officers commanding this organization (we only had twelve officers among an even dozen allotted to the unit, who really felt their respective responsibility for the command) was that I go to Washington and find out our status or in other words "where we stood" and if the War Department still recognized our existence. This was the first of August.

An officer in the S. G. O. did not want to give out anything confidential or an official secret, but he would tell me unofficially that if he were me he would close his hospital, that is, if he had one, and call on his gang, because the first three units organized were to be sent immediately overseas and that Unit "O" was one of the first ready. I thought I might not be presuming too much if I took this suggestion as an inuendo.

Whereupon, I returned home, gave out the news to the members of the unit and consequently to the town as confidential but real dope. I tried on my uniform and closed my hospital.

It was then, during two months and a half's time, that we actually returned to nothingness. We were neither doctors nor officers. We were merely Unit "O." The public had considered us as gone, and gone we were but had no place to go. Our usually indulgent patients didn't want us and the army would not take us on it seemed.

Once more our officers met and this time decided we were everything implied by three blazen letters S. O. L., a term well known in the army meaning simply "stranded or left," with, perhaps a connotation as well as a denotation. It was decided, or rather we decided, all of us, that I again go to Washington, but not alone without witnesses.

One of the officials in the S. G. O. didn't know "when in the hell" we were going, but assured us if we were rearing for service he could send the officers to camp. He also suggested that, since were in army, a little military training might not be inappropriate. It did seem reasonable. He then actually gave us our choice and left it with us as to where we would go. We decided, most naturally, that we would all like to go together to Oglethorpe.

It was in this way that, on September 15, 1917, one of us was ordered to New York, another to Vermont, another to Georgia, two others to Pennsylvania and the rest to Tennessee. Would we ever come together again?

I have merely mentioned those left behind; they were twenty-one nurses and fifty enlisted men. They were left at home to restlessly await instructions while they tried to carry on their usual pursuits as lawyers, druggists, bookkeepers, stenographers, etc. The stenographers might have served me well in answering the correspondence from these people and their families.

Then came a series of significant orders:

"October 15, 1917, Major Addison G. Brenizer, M. R. C., is directed upon completion of his course at Rockefeller Institute for medical research, New York City, to report in person to Major Fred H. Albee, Post Graduate Hospital, New York, for a course of instruction in

orthopedic work, and upon completion of this duty to proceed to Fort Oglethorpe, Georgia."

"November 8, 1917, Major Addison G. Brenizer, M. R. C., is relieved from his present duties at Fort Oglethorpe and will proceed to Charlotte, North Carolina, for the purpose of mobilizing Hospital Unit "O."

The same date under separate orders the following officers were ordered to Fort McPherson, Georgia:

James P. Matheson, Capt. M. R. C., Charlotte, N. C.

William Allan, Capt. M. R. C., Charlotte, N. C.

Robert F. Leinbach, Capt. M. R C., Charlotte, N. C.

Hamilton W. McKay, Capt. M. R. C., Charlotte, N. C.

W. Myers Hunter, Capt. M. R. C., Charlotte, N. C.

Marion H. Wyman, Capt. M. R. C., Columbia, S. C.

Robert H. Crawford, Capt. M. R. C., Rock Hill, S. C.

Henry G. Turner, Capt. M. R. C., Raleigh, N. C.

Archie A. Barron, 1st Lieut. M. R. C., Charlotte, N. C.

Charles I. Allen, 1st Lieut., Wadesboro, N. C.

All these officers were promoted to a higher grade before the completion of their duties except Capt. Crawford, who voluntarily left the army on a Red Cross commission to Macedonia.

"November 10, 1917, under War Department authority, November 3, 1917, the following enlisted personnel of Hospital Unit "O," Charlotte, North Carolina, are ordered to active duty, and who, under War Department authority, are this date transferred to the Medical Department, National Army, will, upon completion of mobilization, under command of Major Addison G. Brenizer, M. R. C., proceed without delay to Fort McPherson, Georgia, for the purpose of training and equipping command prior to duty overseas.

J. W. Sanford, care W. S. Lee, Southern Power Co., Charlotte, N. C.

D. H. Therrell, Camp Joseph Johnston, Jacksonville, Fla.

J. B. Pharr, Colonial Heights, Charlotte, N. C.

T. J. Covington, Wadesboro, N. C.

C. B. King, Jr., Selwyn Road, Charlotte, N. C.

John F. Durham, 804 S. Tryon St., Charlotte, N. C.

R. M. Miller, Ford Motor Co., Louisville, Ky.

D. A. Tompkins, Jr., Edgefield, S. C.

A. P. DuLong, 268 N. Church St., Charlotte, N. C.

A. Irwin Henderson, 219 N. Tryon St., Charlotte, N. C.

E. D. Taylor, Taylor Bros., Winston, N. C.

E. P. Andrews, Charlotte, N. C.

Caldwell Howell, Cherryville, N. C.

J. T. McCrorey, Roddey Poe Merc. Co., Rock Hill, S. C.

Thomas C. Abernathy, 1st National Bank, Lincolnton, N. C.

Alfred S. Reilly, 408 Park Ave., Charlotte, N. C.

Fred Johnson, Davidson, N. C.

John M. Barringer, Statesville, N. C.

John H. Wilson, care F. P. Woll Co., Frankford, Philadelphia, Pa.

E. S. Reid, Jr., Charlotte, N. C.

R. T. B. Little, care So. Cotton Oil Co., Gibson, N. C.

F. H. Medlock, Jr., 211 Hawthorne Lane, Charlotte, N. C.

B. H. Webster, 304 Commercial Bldg., Charlotte, N. C.

C. L. Whiteside, Rock Hill, S. C.

H. S. Caldwell, Davidson, N. C.

W. J. Brown, 544 E. Morehead St., Charlotte, N. C.

A. B. Taylor, 915 W. 4th St., Winston, N. C.

R. H. Harding, 622 N. College St., Charlotte, N. C.

Charles F. Brown, 404 N. Church St., Charlotte, N. C.

Thomas L. Taliaferro, 267 W. 72nd St., New York, N. Y.

W. M. Gibson, Davidson, N. C.

W. M. Osborne, 267 W. 72nd St., New York, N. Y.

Jess E. Corpening, 301 N. Tryon St., Charlotte, N. C.

W. F. Robertson, U. S. Tire Co., Charlotte, N. C.

A. L Young, Care B. M. Fewell, Rock Hill, S. C.

O. M. Marvin, Statesville, N. C., Statesville Drug Co.

W. H. Branson, Care Liggett-Myers Tobacco Co., Lexington, Ky.

J. F. Swing, Charlotte, N. C.

G. B. Crowell, Lincolnton, N. C.

J. Frank Love, Lincolnton, N. C.

Joel J. McAden, Charlotte, N. C.

Paul G. Anderson, Rock Hill, S. C.

J. Foy George, 101 W. Exchange, Fort

Worth, Tex.
H. L. Everett, Laurinburg, N. C.
Fred Field, Mooresville, N. C.
W. A. Davis, 403 W. 7th St., Charlotte, N. C.
J. C. Moose, Care Mr. Gardner, Central Avenue, Charlotte, N. C.
Charles Glasgow, Lexington, Va.
B. H. McGinnis, Piedmont Motor Co., Charlotte, N. C.
Joseph L. Knight, Orrville, Ala.
Norman W. Lynch, Bessemer City, N. C.

"Under the above authority the following named female nurses of Hospital Unit "O," Charlotte, N C., are ordered to active duty and upon completion of mobilization will, without delay, proceed to Ellis Island, N. Y., for training and proper equipment:

(Mrs.) A. W. Allen, 622 N. College St., Charlotte, N. C.
(Miss) Margaret White, Charlotte, N.C.
(Miss) Catherine A. Ikard, Charlotte, N. C.
(Miss) Julia Colson, Charlotte, N. C.
(Miss) Gertrude Shepard, 140 Juniper St., Atlanta, Ga.
(Miss) Cora L. Dearman, Charlotte, N. C.
(Miss) Sarah M. Harris, Concord, N. C.
(Miss) Josephine Watts, Charlotte, N. C.
(Miss) Katherine Osborne, Charlotte, N. C.
(Miss) Elma Jones, Charlotte, N. C.
(Miss) Elizabeth Hill, Charlotte, N. C.
(Miss) Harriett L. McCoy, Spartanburg, S. C.
(Miss) Elizabeth Low, Charlotte, N. C.
(Miss) Edna M. Hill, Charlotte, N. C.
(Miss) J. M. Alderidge, Charlotte, N. C.
(Miss) Lula Lambeth, Charlotte, N. C.
(Miss) Macie Stanford, Charlotte, N. C.
(Miss) Sue J. Moore, Charlotte, N. C.
(Miss) Blanch Leonard, Charlotte, N. C.
(Miss) Bess Swearngan, Charlotte, N. C.
(Miss) Rose A. Downey, Charlotte, N. C.

Five of our men were lost to the unit at Fort McPherson. Dr. C. L. Whiteside, dentist from Rock Hill, South Carolina, was sick in the hospital with temperature and heart trouble and was allowed to go home on a furlough prior to his discharge and there he died suddenly of heart failure. Caldwell Howell, Cherryville, N. C., was left behind with meningitis, but later recovered almost completely but did not continue his service. Dr. B. H. Webster, dentist, was transferred to the dental corps. John Wilson, Frankford, Pa., and E. S. Reid, Jr., Charlotte, N. C., were transferred to the aviation corps. With the exception of a severe pneumonia passed through by William J. Brown, Charlotte, N. C., and the accident to Miss Sarah M. Harris, Concord, N. C., whose neck was cut twice by a negro patient in delirium ,there was no serious sickness nor serious mishap to any one in the unit during the services of eighteen months in this country and in France.

'Cording to orders, I saw the nurses off from Charlotte, N. C., to New York early in the evening of November 15, 1917, and escorted the men over a night's ride to Atlanta, Georgia, over beyond which city lay Fort McPherson. With fifty men dressed in civies and accompanied by my wife, we detrained at the station in Atlanta, made our way in a body led by myself and wife to the first street car, pointing in the direction of the Fort. I was very much annoyed by the street kids who wanted to carry posters or graft free tickets to the minstrel show.

The street car dumped us before the gate of Fort Mack, as the conductor pointed it out to us. We entered the walls of that ancient fortification to stand a siege for three months. Confined to camp, more or less, we spent the time from November 16, 1917, to February 4, 1918, with many false alarms as to our leaving and repeatedly warned to be ready to depart for duty overseas.

On February 4, 1918, the "confidential order" came, ordering Units B, H, O and R, under the command of Major Brenizer, to Camp Merritt, New Jersey. This was a "secret movement of troops," known to all our friends up in North Carolina who met us at the stations as we passed through the State.

Our stay at Camp Merritt was short, only a week, so that on February 16, amid a clamor and confusion, we left at six a. m. for Pier 56, North River, New York, and arrived there about eight o'clock. One of our officers was left sleeping at Camp Merritt and only arrived to join us, after traversing New York in a "flivver" just as the boat was raising its gangway.

Our boat was one of the Cunard Liners, S. S. Carmania. We were sailing at a bad season and just after the sinking

of the Tusacania. It was very cold and at Halifax the land was covered with snow and the water was thick with blocks of ice. It was at Halifax that we left behind one of our officers, Capt. R. F. Leinbach, with pneumonia and came near losing one of our men, Charles S. Brown, who accompanied Capt. Leinbach to shore and who was barely able to leap from the top of the tug boat in which he was riding into our ship, as she was launching rapidly out to sea.

We were seventeen days on the water, arriving at Liverpool March 4th. Then we moved consecutively from Liverpool to Southampton, from Southampton, across the English Channel, to Le Havre and from Le Havre to Bordeaux, arriving at our destination on March 16, 1918.

After six weeks of travel, by land and water, with short intermissions at so-called rest camps, and ending the final lap with a three days and three nights trip on a troop train from Havre to Bordeaux, we were delighted to come to a halt.

Capt. Leinbach joined the unit after several months at Bordeaux. At Southampton, where the streets were kept dark and no lights were allowed on automobiles and where also the rule is to turn to the left, two of our officers were run over by an automobile and painfully injured. These officers recovered. Perhaps our most exciting adventure was our stopping at midnight in the middle of the English Channel following an explosion which proved to be the engines out of order and here we waited for two hours under such encouraging admonitions from the encircling torpedo boat as "if you loiter around here much longer you get a torpedo through you."

We shall never forget the day: Immediately after the arrival at Base 6 that wonderful lunch of beef, pommes frites, white bread, fromage, comfiture and chocolada, the first bath and clean up followed by a dance that night. In spite of the fact that we were from North Carolina and our hosts from Boston, and a little suggestion of the reception of the country dog by the city dog, still our reception was all we could expect. At any rate before our final parting, after the war, many warm friendships were developed between us.

Unit "O" was merged with the Massachusetts General Hospital and with the addition of casual officers, nurses and orderlies formed the largest single Base Hospital in France. Base Hospital No. 6 was located near Bordeaux on the line between the 18 miles of American docks at Bordeaux and the whole Southern Sector and formed a hospital of 5,000 beds; 3,500 surgical and 1,500 medical.

The personnel of Unit "O" was distributed over surgical and medical services of the hospital. Major Richard Cabot of Boston was placed in charge of the medical service and Major Addison G. Brenizer of Charlotte, N. C., in charge of the surgical service.

The following figures will give some idea of the work done:

Total number of admissions to hospital	23,288
Number of deaths	420
Deaths from pneumonia	284
Total number of surgical cases	17,466
Number of deaths entire surgical service	79
Number of deaths in operated cases	52

(Twelve of these empyema and three pneumonia).

Here we worked mostly day and night from March 16, 1918, to February 14, 1919, when all officers and nurses of the Massachusetts General Hospital and Unit "O" were ordered back to the United States, arriving in New York March 2, 1919. The men arrived in New York two weeks later. The division of the officers and nurses from the men and their arrival before them was simply a question of transportation allowed by the arrival at Bordeaux of an unexpected boat, one of the United States Fruit Company's, carrying only 94 passengers, and space sufficient for the nurses and doctors.

He who exhibits no faults is a fool or a hypocrite whom we should mistrust. There are faults so intimately connected with fine qualities that they indicate them, and we do well not to correct them.—Joubert.

The next annual meeting of the North Carolina Medical Society will be held at Pinehurst, N. C., April 26-27-28.

The Health Officers' meeting will be April 25.

SOUTHERN MEDICINE AND SURGERY

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M. L. TOWNSEND, M. D. Editor

CHARLOTTE, N. C.

"Read not to contradict and confute, nor to believe and take for granted, nor to find talk and discourse, but to weigh and consider."—Francis Bacon.

LIGHTING THE LAMPS.

Another momentous step has been taken in North Carolina's progress.

The recent session of the State Legislature has been lighting the lamps, in an effort to dispel, as much as possible, the darkness of ignorance.

Not only were large sums of money appropriated for education but the various institutions for the care of the sick and the state's unfortunates were also given much more ample provision for rendering the service these sick and unfortunates need.

We cannot commend too highly this action: " 'Tis more blessed to give than to receive" is veritably an axiom and the state in setting aside these sums is not offering a charity or making a sacrifice. Instead it is making the very most profitable investment possible for it to make. The results of wisely spending these vast sums for the purposes designated can never be measured. The beneficial effects will continue to react to the good of the state's taxpayers so long as time is. The light of progress and civilization shall shine with increasing brilliancy so that the daily walks of life and the homes of our children and children's chlidren will forever be illumined with genuine well being.

There is withall a feeling of regret—not that these sums were appropriated for the purposes specified—but, that other sums were not also provided for the fuller development of the state's public school system. There comes the feeling that possibly the state's educational system is tending to be top heavy. That not enough emphasis is placed on elementary or primary schools. We are providing means for giving ample college and university training but no youth can enter college until first the grades are completed. Is it not, then, of primary importance to prepare the child—every child—to take advantage of the college courses later.

Would not the state, as a commonwealth, be better off if all her boys and girls should complete the grades than if only a part were allowed this privilege even though a part of this part were offered a college or university course. If the state is unable to accomplish in full its noble ideal of giving every son and daughter a full educational training then are we not getting the "cart before the horse" in emphasizing the universities when still there are thousands of children starving for adequate primary schools.

We need and must have the University but we need infinitely more a comfortable school house and a competent teacher within reach of every rural child in every corner of the state. We need them not for decoration or to brag about but we need them, that every single child between the ages of 6 and 15 may have eight or nine months every year of real bona fide training. There may be exceptions but none dare deny the rule that the fate and future of every child is fixed at the age of 15. If before then he is well filled with noble impulses his life will be well filled with noble deeds.

"If you care for the pennies the dollars will care for themselves."

If you care for the children the college youths will care for themselves.

Baby Hospital at Blowing Rock.

The question of summer heat and of safely getting the little fellows through it is a problem that confronts every practitioner of medicine. The plans of Mayview Park are especially commendable because they are taking advantage of a very unusual geographical and climatological location for this babies summer home. Also because they seem to have provided every requisite for properly carrying it out.

With a Pediatrist in charge, a specially trained nurse, pure milk from a herd of special cows and a complete pharmacy with registered pharmacist, doctors may safely recommend this place where mother and baby can escape the worries of summer heat.

Southern Pediatric Seminar.

It is particularly gratifying to learn that there will be held at Black Mountain, Asheville and Saluda a course of Post Graduate instruction in Pediatrics, during the summer, as announced elsewhere in this issue.

The course, covering two weeks, will be comprehensive and will be given by very able and competent men.

We say it is gratifying to know of this and it is, because we are interested and concerned in anything that is for the good of the profession and that will ultimately be advantageous to the people who look to the profession for help in their problems of sickness and disease.

This seminar will provide an opportunity of real worth to doctors in the way of Pediatric study and will at the same time provide a most desirable two weeks' vacation.

FRACTURES.

The May number of the American Journal of Surgery will be devoted exclusively to "Fractures." This issue will present the following original papers by recognized authorities upon the subject of fractures and their treatment.

"Fractures of Tibia-end-results and Ambulant Treatment"—Dr. John J. Moorhead, New York City.

"Treatment of Fractures of the Humerus"—Dr. Joseph Blake, New York.

"Treatment of Fractures at and About the Ankle"—Dr. Frederic J. Cotton, Boston, Mass.

"The Cerebral Symptoms and Operative Indications in Skull Fractures"—Dr. William Sharpe, New York City.

"Latent Symptoms From Unrecognized Fractures of the Vertebrae"—Dr. Norman Sharpe, New York City.

"Fractures of Fingers and Toes"—Dr. Harry E. Mock, Chicago, Ill.

"Early and Complete Immobilization as a Factor in the Preservation of Joint Function in the Treatment of Fractures"—Dr. H. Winnett Orr, Lincoln, Nebr.

"Intertrochanteric Fractures of the Femur"—Dr. Kellogg Speed, Chicago, Ill.

"Bedside Radiography in Fractures"—Dr. I. Seth Hirsch, New York.

"Fractures at the Head of the Radius"—Dr. James Morley Hitzrot, New York.

"Traction—Suspension— Apparatus" Dr. Henry H. M. Lyle, New York.

"Pott's Fracture of the Leg"—Dr. W. L. Estes, So. Bethlehem, Pa.

MEDICINE

Edward J. Wood, M.D., Dept. Editor.

One of the very important medical contributions of the war was the study of 400 cases of arthritis by Ralph Pemberton and his associates (Archives of Internal Medicine, March and April, 1920), at U. S .General Hospital No. 9, Lakewood, N. J.

This work is of such importance that any abstract must of necessity do an injustice. It was found that in 58 per cent exposure was the exciting factor while careful examination revealed apparent foci in 72 per cent. In spite of these findings it was noted that the group of cases showed a considerable independence of focal infection. Forty-six per cent recovered in the presence of demonstrable surgical foci which is nearly three times the number which improved after removal of foci.

Trauma to weight-bearing parts caused by drilling, hiking, etc., was not proven to play a role in causation.

Basal metabolism was normal in 80 per cent of 29 cases studied and in 20 per cent slightly below.

The carbon dioxide combining power of the blood, total fat, cholesterol and calcium of the fasting blood fell within normal limits. About one-half of 40 cases studied showed abnormally high blood creatin. With an improvement there was a corresponding fall in creatin in certain cases. The urea of the fasting blood in 67 observations in 57 cases was normal.

A study of renal function showed a slight lag in the elimination of water, of nitrogen and especially of salt. However, there is no marked alteration of kidney function but only a slight lowering in certain cases.

The important thing seems to be a lowering of sugar tolerance in a large proportion of the cases which was roughly proportionate to the activity of the process. It tends to return to normal with convalescence. The return to normal is independent of the type of treatment but is more abrupt with re-

moval of causative foci. In some severe cases a lowered tolerance persists even after removal of foci.

It was recognized that in some cases the duration of the process after treatment began was from six months to a year longer than it should be if earlier attention is paid to focal infections, a coincidental use of local measures and in some cases nonspecific protein therapy, or a restricted diet.

A restricted diet was justified by finding a difficulty in the utilization of carbohydrate as well as a lowered sugar tolerance.

In a later contribution Pemberton (Jour. A. M. A., Dec. 20, 1920, Vol. 75, pp. 1759-1764), says that a reduced diet in suitable cases is best determined over a period of ten days by noting the average caloric intake. If the intake is high a sharp reduction can be established without detriment to nutritional needs and spare the patient as much as 1,000 calories. If the intake is low caution must be observed. Hydrotherapy was found of distinct value when used cautiously and intelligently. Massage and various drugs were also used with restricted diet.

No internist could afford to neglect a careful review of all of Pemberton's contributions on this subject. In the Presbyterian Hospital in Philadelphia he with a large group of experts in several lines are carrying on these investigations under a special grant.

Anthony Bassler (Am. Jour. Med. Sci., Sept., 1920, No. 3, Vol. CLX), while not underestimating the importance of tonsils and teeth as foci of infection in arthritis deformans regards the colon as the commonest source. While some observers regard blood chemistry as showing the disease to be due to constitutional errors, he thinks it more logical to believe that the condition is due to a focus somewhere, the intestinal canal being the most frequent seat.

Foci should be treated surgically and when no benefit results complete examination of urine and feces is advised. Dieting according to the type of bacterial infection present in the gut together with bacterial treatment offer distinct benefit. Constipation and debility are corrected not by drugs but by diet.

He believes that much invalidism would be spared if early attention was paid to the gut.

(All this class of work is apt to lead unconsciously into unjustified enthusiasm. There must be, however, some real basis for Bassler's results. The writer is familiar with a few of the cases and the results are striking. The matter deserves the very closest investigation.)

Albert Keidel and Joseph Earle Moore in Johns Hopkins Hospital Bulletin (Vol. XXXI, No. 357, Nov., 1920), give a splendid condensed review of the treatment of neurosyphilis by the intravenous spinous route.

Sachs objection is mentioned. He thought that by the intravenous method equal good was accomplished but he gave many more doses than any one else of our acquaintance.

Dercum recently condemned intraspinal therapy as unscientific and thought the only possible good was the coincidental spinal drainage from which he had obtained brilliant results.

The present writers (Keidel and Moore) conclude from their own work that intra-spinal therapy is a necessity as well as a rational adjunct in the treatment of neurosyphilis in cases failing to respond to intravenous measures.

Gynecology and Obstetrics

Robt. E. Seibels, M. D., Department Editor

Leucorrhoea.

The average physician is frankly discouraged when he tells you of his results in treating this common and very annoying symptom. His results in a few cases have been permanently good, in many temporarily pleasing, but in the majority, finally poor. The acute purulent discharge clears up, the itching and hyperesthesia of the vagina disappears and then, usually, the patient ceases to co-operate or disappears or hears from friends that "all women have it"—for various reasons ceases to take treatment and adds another to the doctor's list of unsatisfactory results.

We believe that the two reasons for failure to relieve this symptom are faulty diagnosis and inability to get the proper co-operation from the patient.

Faulty Diagnosis—Treatment directed upon an inflamed, edematous cervix with thick muco-purulent discharge in the presence of subacute or chronic sal-

pingitis, is labor wasted. The focus of infection is too high up to be reached by any cervical application. And in marked retroversion with flexion or in a subinvoluted uterus with anemia, overwork, general fatigue and exhaustion, local applications have most discouraging results when used alone. The general condition must be built up by having the patient rest a half hour morning and afternoon, get a good night's rest by regulating domestic situations—where there is a baby give him one or more bottles in place of breast feedings—stop the excessive bridge-playing in the city patient, endeavor to lessen the work by restricting the activities of her less wealthy sister. In the anatomical abnormalities much can be accomplished by rest in bed and douches plus cervical applications and tampons of glycerine compound—the boroglyceride 50 per cent is excellent. In the deeply lacerated, eroded, everted, thickened cervix which we see in multiparae if we do not get prompt results with local treatment, some form of plastic operation is to be tried.

Co-operation—In no gynecological condition is co-operation more important. If the patient will not take douches frequently and properly, will not lie down as directed, will not exercise her abdominal muscles, will not come regularly for treatment, the outlook is discouraging. Nor can the physician who is not interested secure results. His examination should be complete—should include the blood, the urine and smear from the cervix and he should make frequent examinations by touch and by speculum to determine the pelvic situation accurately. He should examine a stained smear every third or fourth visit to fix the bacteriological etiology and to see the progress of his treatment. Not infrequently one is discouraged at the persistance of discharge, but microscopic examination reveals only mucous—which may be due to the severity of the applications and more soothing douches cause this to clear up. And the physician must be equipped with various modes of attack, he must not get in the habit of using any one drug as a routine—nitrate of silver from 1 to 10 per cent with iodine, or alone; iodine in various strengths; phenolized iodine in glycerine, 1 to 3 per cent, so valuable to the nose and throat specialist, is equally useful in cervical catarrh. Pure phenol carefully applied to cysts is better than a curet. But before any attempt is made to apply these solutions to the cervix certain things are essential: the vagina and cervix must be cleansed of the adherent secretions with soda bicarbonate, saturated solution, then sponged dry and with a good light, a wide exposure and plenty of deliberation, the application is made with cotton—not just wiped around but carefully put just where it is wanted—in the cervical canal.

Intercourse—A not infrequent cause of poor results is the continuance of intercourse. Under any circumstances, intercourse should be interdicted for the increase in congestion and trauma are apt to continue the irritation and increase the discharge. The penis is seldom sterile and the additional bacteria carried in by it—even in the absence of venereal infection—are undesirable.

Urology

A. J. Crowell, M. D., Department Editor

The following case is reported to emphasize the importance of immediate action in cases of ureteral obstruction by impacted stone and especially when associated with pelvic infection.

Mrs. S.—Age 18. Housewife, 2 children, 1 three and the other one year old.

F. H.—Negative.

P. H.—Always healthy except for present trouble. No venereal history. Examined at our office three years ago and diagnosis of stone in left kidney made and operation advised. Functional activity of both kidneys good at that time.

P. I.—Began suffering four or five years ago with pain in back, left side, dead aching pain in character, occasionally becoming very acute. Frequency of urination, constant in character, increased by motion, and becoming very marked with acute exacerbations.

Examination—Healthy in appearance but small in stature. Nothing special obtainable on palpation. Tender over left kidney on deep percussion. Urine acid, pus in abundance, an occasional blood corpuscle, trace of albumen but no tube casts or sugar.

Cystoscopy—bladder mucosa chronically inflamed, ureteral openings in normal position and apparently normal in appearance. Ureter catheter passed into pelvis of each kidney readily. Flow from left kidney constant, indicating a hydronephrosis, and filled with pus. The urine came from the right intermittantly and also contained considerable amount of pus. Phthalein from right appeared in ten minutes after intravenous injection and output in 15 minutes was 16.5 cc, amount dye 4 per cent. That from the left was .41 per cent in same length of time. X-ray showed large stone four inches below uretero-pelvic junction. Pyelogram shows large hydronephrosis and ureterogram a greatly dilated ureter above the stone. The kidney was removed March 30, 1921, and found the parenchyma almost completely destroyed. The kidney was nothing less than a multilocular hydronephrotic sac. This was made up of five larger sacs each containing about 120 cc. of urine filled with pus, and several smaller dilatations of the calyces. All the cystic dilatations connected with the dilated kidney pelvis. The wall of the larger dilatation was very thin—being from 1-2 mm. in thickness. A small mass of renal tissue was found at the upper pole. A large wedge shaped stone was found blocking the ureter. The ureter above this was dilated. The kidney pelvis was markedly dilated.

Present Status—No complications and patient's present condition five days after operation is perfectly satisfactory.

Results of Operation for Varicocele.

During the period immediately preceding and after the entrance of the United States into the World War and while recruiting was in active progress, a large number of operations for varicocele were performed on young men in order to permit their entrance into the Army or Navy. As a result of one of these operations in which the ligation of the veins was followed by the development of a hydrocele, a suit for alleged malpractice was brought. A search of the American literature at this time, in order that the highest medical authorities on the subject might be quoted, revealed the fact that modern textbooks on urology and on general surgery fail with one exception to recognize the frequency of this complication. John Douglas, New York (Journal A. M. A., March 12, 1921), after a study of the end-results of 303 operations for varicocele at St. Luke's Hospital, reached these conclusions: The operative treatment of varicocele is frequently followed by hydrocele. Of a total of 303 operations, seventy-six patients were examined, thirty of whom, or 39 per cent, had a hydrocele; forty reported by letter or telephone, and of these seven, 17 per cent stated that hydrocele had developed. Of the total of 106 patients examined or reporting by letter, thirty-seven, or 35 per cent, had hydrocele. Four, or about 4 per cent, had atrophy of the testicle, and there were two recurrences of the varicocele. The operation should not be performed except in those cases of very large varicocele giving marked symptoms in a non-neurasthenic patient—certainly not in the type of cases previously referred by the various medical examining boards for admission to the Army or Navy. If the operation is undertaken, the frequency of hydrocele as a complication should be explained to the patient as a protection to the operating surgeon. In the performance of the operation every care should be taken to avoid trauma to the veins of the cord, and to prevent hematoma or even slight infection, and thus to limit thrombosis and also to avoid the ligation of the spermatic artery as well as the artery of the vas.

MENTAL AND NERVOUS.

Jas. K. Hall, M. D., Dept. Editor.

To the student of heredity who believes that like always proceeds out of like, the origin of the personality and the intelectual endowment of **Abraham Lincoln** must remain always inexplicable. The loins of commonplace parents and a community which could have offered no mental or moral inspiration was the source of this stupendous intellect. Yet once at least it would seem that he was insane. His contemplated marriage with Anne Rutledge was prevented by her unexpected death in 1835. For a considerable period thereafter he was gloomy and despondent and his friends were uneasy about him. Finally, however, he recovered his habitual

spirits; in 1840 he become engaged to Mary Todd, and the wedding was set for New Year's day in 1841. The bride was attired in the wedding raiment; the minister was waiting to pronounce the vows; the supper was made ready; the friends had gathered in; but the groom did not appear. At daybreak he was found, dazed and disconsolate, depressed and miserable, wandering through the chill and the gloom of the winter's night. For almost a year he remained profoundly dejected and miserable, sleepless, without appetite, hopeless, and self-reproachful. The constant watchfulness of friends prevented probable suicide, and after prolonged convalescence near his old childhood home in Kentucky he returned in normal health to his legislative duties in Illinois. Mary Todd remained true to him, and a year or so later they were married, but probably against the protest of Mary Todd's sister, Mrs. Edwards, who unhesitatingly voiced her opinion that he had been insane. Throughout the remainder of Lincoln's life it is well known that he experienced not infrequent periods of despondency and gloom. Perhaps his jests and at times his inelegant witticism were unconscious efforts to lift himself out of his slough of despond. And perhaps it was during a period of compensatory manic-depressive expansion that he carried to successful conclusion a revolutionizing civil war.

One thing amongst many others that the public may learn with some astonishment is that so-called insanity is not persistently everlasting, and that even during a period of insanity, and especially during a lucid period, the so-called insane individual may do great things, either good or bad. Dean Swift and Mary Lamb were pronounced manic depressives, at one time sane and at another time insane, but they have left their names forever to remain in English literature. "A Psychologic Study of Abraham Lincoln," in the Psycho-Analytic Review for January, 1921, is interesting and unusual reading. Dr. L. Pierce Clark, of New York, is the author. The notes above constitute an imperfect review of the article.

In the Journal of the American Medical Association for March 26, 1921, a thought-provoking editorial of some length appears under this title: "Are there more strains than one of Spirochaeta Pallida?" Since 1894, when the term "parasyphilis" was first made use of by Fournier, there has been decreasing doubt that paresis and tabes dorsalis are manifestations of rather chronic syphilitic damage to the central nervous system. Noguchi some years later by finding the syphilitic parasite in the brain, blood, and cerebro-spinal fluid of a few paretics, afforded pathologic and parasitologic explanation of Fournier's theory. Today, of course, both the above diseases are universally looked upon by medical men as additions to the large catalogue of protean syphilitic symptoms. Are paresis and locomotor ataxia caused by a distinctive and special strain of the parasite, which cunningly and insidiously and slowly selects the central nervous system for assault; or must we continue, as at the present time we are obliged to do, to regard these two fatally progressive diseases as manifestations of specific infection which has existed long enough to strike in so deep, as it were, as to fasten itself finally upon these delicate nervous structures? Within the past twenty years much work, both clinical and experimental, has been done in an effort to ascertain whether or not there is only one strain of syphilitic parasite, or many. The editorial reviews in detail the work and the opinions of various investigators, and it should be read with care by the general practitioner and by the specialist who limits his thought largely to the nervous system. Perhaps there may be a peculiar strain of the Spirochaeta Pallida which selects the nervous system for attack. This strain, it may be, yields less easily or not at all to the usual parasiticides, with the result that paresis and tabes remain incurable diseases.

Perhaps the president expected criticism for making a brigadier general of his family physician in order that the doctor might continue in Washington to be the family physician at the White House. But the criticism was sporadic and short-lived. It was wholly unmerited. Dr. Charles E. Sawyer is a man of ability and of standing in the medical profession. He has been busily engaged in the practice of his profession since his graduation from the Homeopathic Hospital College in Ohio

in 1881, at the age of 21. Two years prior to that date he was married.

In 1890 he established at Marion, Ohio, the Sawyer Sanatorium for the treatment of nervous and mental diseases, and that institution has grown to be a hundred-bed hospital. In more recent years the management of the sanatorium has been largely in the hands of Dr. Carl W. Sawyer, a son of President Harding's physician. Doctor Charles E. Sawyer is vice-president of the Marion National Bank; in religion he is a Lutheran; in politics a Republican; and he is a Shriner.

In a brief note to the editor Doctor Sawyer gives expression to the hope "that some day history may record something worth while of this administration as it is related to public health affairs of the United States."

It is creditable to the president that in being lifted into high place he did not forget the doctor who had cared for him throughout his more obscure years, and Doctor Sawyer cannot be unmindful of the honor and the responsibility of having in his keeping the health of the ruler of the mightiest republic the world has yet known. He deserves to be brigadier general, and the president has honored the medical profession in bestowing such signal honor upon the family doctor.

Orthopædics

Alonzo Myers, M.D., Dept. Editor.

Status of Orthopaedic Surgery.

Paper read before the Orthopaedic Section of the Southern Medical Association by Dr. Wm. S. Baer, of Johns Hopkins Hospital, title, "Present, Past and Future of Orthopaedic Surgery." This paper shows the status of orthopaedic survery by a few questions and answers.

Who is to do the reconstruction work? Who is to restore function to the injured joint or bone? Who is to restore these men to their economic value in society? And if they cannot be restored who is to estimate the amount of their disability? The orthopedist, is Baer's answer.

Fracture of the Neck of the Femur.

A. Basset, Journal de Chirurgie, Paris, 1921, 17, No. 2.

Bassett gives a detailed illustrated description of the simple apparatus which facilitates driving a screw lengthwise into the neck of the femur, through the head to the acetabulum according to Delbert's technic. He has applied this method in ninety-five cases for recent fracture or pseudarthrosis, and regards it as reliable and simple and sure to succeed. He uses an ordniary screw from 7 to 10 cm. long, with wide spirals, preferring this to a screw made of dead bone as stronger and more reliable. It may be possible, however, to use the dead bone with a metal guide insert. The method can be applied without the apparatus for orientation, but the screw is liable to go astray.

Operation for Recurring Dislocation of Shoulder Joint.

T. L. Sandes, p. 27, South African Medical Record, Cape Town, Jan. 22, 1921, 19, No. 2.

The operation performed by Sandes in five cases was devised on the principle of strengthening the suspension of the limb at the site, and by means analogous to those of a normal joint. An anterior incision is made in the deltopectoral sulcus from the clavicle as far down, if necessary, as the insertion of the deltoid. This muscle is reflected, exposing the anterior and lateral aspects of the capsule. With the arm in abduction to relax the deltoid a drill of large size is driven antero-posteriorly through the humerus, medial to the tendon of the biceps, and through or close to the insertion of the subscapularis tendon about the level of the middle of the articular surface of the head. The drill passes backward horizontally, and emerges through the great tuberosity behind. The diameter of this tunnel should be about 1 cm. The capsule of the joint is not opened. A strip of fascia lata is excised about 30 cm. long, and about 4 cm. broad. The excised strip is rolled or folded up into a compact cord, and sewn with a running stitch of linen thread or silk into a firm ligamentum teres. A silver wire with a loop or a pliant probe is used to draw a strong linen thread through the tunnel, and this in turn, being fixed to the extremity of the artificial ligament, pulls

it anteroposteriorly through the bone. A small incision is made on the upper aspect of the clavicle lateral to the coracoid process, exposing the bone, from which the soft parts are freed. With a curved pair of forceps passed in front of the clavicle and burrowed through the deltoid the posterior extremity of the artificial ligament is pulled up and slung over the clavicle. Both ends are seized in forceps drawn taut (with the arm at an angle of 45 degrees from the side), overlapped and sewn securely together with silk or linen thread. Thus a firm figure-of-8 ligament is made to suspend the humerus through, approximately, its axis of rotation in the movement of abduction to a fixed osseous buttress above. Any looseness of the capsule is repaired by taking in a reef usually in front and below. The arm is well supported in a sling and rested for six weeks.

State Medicine

L. B. McBrayer, M. D., Department Editor

The Medical Profession and the Public.

William J. Mayo, Rochester, Minn. (Journal A. M. A., April 2, 1921), discusses individualism in medicine and medical co-operation. He states that highest intelligence is a political liability, and lowest intelligence is a menace to good government. Functional nervous diseases are the smoke screen of quackery because the public at large fails to appreciate the essential differences between what we speak of as functional nervous diseases and their mimicry of the physical. The various cults patronized by the public represent treatment without knowledge, in response to the desire of the people for a remedy for existing ills, real or imaginary. The "patent medicine" business is based on the same desire for a remedy and faith in a suggested cure. The public is satisfied with each new cult until its failure becomes known. Hope springs eternal in the human breast, and quack remedies and cults with new names takes the place of the old. The striking feature of the medicine of the immediate future in Mayo's opinion will be the development of medical co-operation, in which the state, the community and the physician must play a part. Health insurance, while sound in theory, has not taken human nature sufficiently into account. The medical profession can be the greatest factor for good in America. The greatest asset of a nation is the health of its people. The real job of the medical profession is the extension of knowledge of what the medicine of today is doing and can do in the future, and this must be done by collective effort. Properly considered, group medicine is not a financial arrangement, except for minor details, but a scientific co-operation for the welfare of the sick. Medicine's place is fixed by its services to mankind; if we fail to measure up to our opportunity it means state medicine, political control, mediocrity, and loss of professional ideals. The members of the medical fraternity must cooperate in this work, and they can do so without interfering with private professional practice. Such a community of interest will raise the general level of professional attainments. The internist, the surgeon and the specialist must join with the hysiologist, the pathologist and the laboratory workers to form the clinical group, which, must also include men learned in the abstract science, such as biochemistry and physics. Union of all these forces will lengthen by many years the span of human life, and as a byproduct will do much to improve professional ethics by overcoming some of the evils of competitive medicine.

Council on Health and Public Instruction Formulates Its Social Program.

The House of Delegates of the American Medical Association, at its recent meeting in New Orleans, directed the Council on Health and Public Instruction to make a report at the next annual meeting on the relation of the medical profession toward the public. At its meeting, November 11, the council considered this matter and in doing so asked to sit with it Dr. Frank Billings of Chicago, Dr. Hugh Cabot of Ann Arbor, Dr. Wadsworth of the New York State Department of Health and Dr. F. E. Sampson of Creston, Iowa.

The council considered the following subjects and took action as stated below:

1. The council believes it highly desirable that the nature and transmission of communicable diseases should be taught in the public schools of the coun-

try. This is already a legal requirement in a few states. In other states such instruction is confined to tuberculosis. The secretary of the council was requested to gather such information as he may be able to find bearing in this matter and to have framed a model bill for introduction into the legislatures of the states which do not already provide for such instruction.

2. The council believes that teachers in our public schools should know something about the communicable diseases and what should be done with pupils under their charge developing these diseases. The council believes that a course in epidemiology should be required in all normal schools and in schools of education in our universities; in short, that no one should be licensed to teach without having had instruction in epidemiology. The secretary of the council was requested to have formulated a model bill bearing upon this subject.

3. The council is of the opinion that there should be a closer co-operation between the medical profession and laymen who are interested in public health, and the council recommends that sections on public health and sanitation be organized in state and local medical societies, and that laymen interested in public health be admitted as associate members of this society and referred to the sections. In the opinion of the council, this matter should be discussed more fully at the next meeting of the council in March, 1921.

4. In the opinion of the council, it is highly desirable that the American Medical Association should, as soon as possible, begin the publication of a popular, up-to-date journal on sanitation and epidemiology, which should give to the public the latest, most complete and most scientific information concerning the prevalent and communicable diseases. It is the wish of the council that this matter be referred to the Board of Trustees of the American Medical Association.

5. The Council on Health and Public Instruction believes that the American Medical Association should take steps to secure the following results:

(a) To assist local medical practitioners by supplying them with proper diagnostic facilities.

(b) To provide for residents of rural districts, and for all others who cannot otherwise secure such benefits, adequate and scientific medical treatment, hospital and dispensary facilities and nursing care.

(c) To provide more efficiently for the maintenance of health in rural and isolated districts.

(d) To provide for young physicians who desire to go to rural localities, opportunities for laboratory aid in diagnosis.

(e) The council believes that these results can be best secured by providing in each rural community a hospital with roentgen-ray and laboratory facilities to be used by the legally qualified physicians of the community. The secretary of the council was requested to study the laws of the different states bearing upo nthis subject and to prepare a model bill to be studied more fully at the meeting of the council in March, 1921.—Victor C. Vaughan, M.D., Ann Arbor, Mich., Chairman, Council on Health and Public Instruction.—Jour. A. M. A., Dec. 4, 1920.

X-Ray and Laboratory

Robert H. Lafferty, M. D., Dept. Editor.

At the meeting of the Societe de Radiologie Medicale de France, October 12, 1920, Drs. Haret and Truchot made a report on the Radiotheraphy of Sciatica. They review the work of MM. Zimmern and Deriaux and they report their experiments with various techniques. The one that seemed to give the best results in their cases was a daily dose of 1H unit each day for five consecutive days and a rest of five days, then repeat. In some of their cases only two series was required and in none did they exceed four series. They used four and five mm. of aluminum filters. Dr. Case, in reviewing their paper as found in the "Bulletins Memoires de la Societe" gives an outline of their results:

"In six cases of sciatic neuralgia (pain symptoms only, without atrophy or changes of sensibility and with normal reflexes), they got six cures with two and three series of five sittings each. In twelve cases of sciatic neuritis (continuous pain, muscular atrophy, trophic trouble, troubles of sensibility, abolition or diminution of the tendo achilles reflex) they got seven cures

with three and four series of five sittings each, three cases much improved with the same amount of treatment and two cases only very slightly improved, frankly considered as failures." The treatments are given over the two last lumbar and the sacral foramina.

Organ Stimulation by the Roentgen Ray.

William F. Petersen and Clarence C. Saelhof, Chicago (Journal A. M. A., March 12, 1921), after animal experimentation have reached certain conclusions, among which are these: The roentgen ray, in proper dosage, has the property of stimulating cellular metabolism. When organs are selectively stimulated, by roentgen rays, therapeutic results can be achieved either by direct stimulation or an external secretion (the kidney) or of an internal secretion (the pancrease in diabetes). A second method of possibly influencing remote pathologic lesions lies in the mobilization of antibodies, enzymes and thromboplastic substances following selective organ stimulation. The effects on tuberculosis (irradiation of the spleen), on hemophilia and purpura (irradiation of the spleen) and some of the effects on malignant tissues can possibly be examined from this point of view with profit. It is probable that the indications of roentgen-ray therapy in treatment of internal dieases will find marked extension if proper recogntion is given the possibility of organ stimulation by such physical means.

Diagnosis of Pregnancy by Roentgen Ray.

A positive diagnosis of pregnancy has been made by demonstrating portions of the fetal skeleton in utero as early as the end of the fourth month of gestation. The earliest positive diagnosis in the series of cases studied by R. A. Bartholomew, Barnes E. Sale and J. T. Calloway, Atlanta, Ga. (Journal A. M. A., April 2, 1921), was obtained at the beginning of the fifth month of pregnancy. During the third month of pregnancy, roentgenoscopy is uniformly negative. During the fourth month of pregnancy, a positive diagnosis may very exceptionally be obtained toward the last of this period. During the fifth month of pregnancy, a positive diagnosis of pregnancy may be obtained in at least one-third of the cases. During the sixth month of pregnancy, a positive diagnosis of pregnancy may be obtained in at least one-half the cases. During the seventh, eighth and ninth months of pregnancy, a positive diagnosis of pregnancy should be obtained in the great majority of all cases.

Hospitals and Sanatoriums

John Q. Myers, M. D., Department Editor

Meat for the Hospital.

Probably there is no class of caterers who have a harder problem than the person who plans for the hospital meal. Here they plan for the hard working help, the brain worker, and the convalescent or the sick person with the finicky appetite, as well as all the various special diets. Here more than anywhere else a knowledge of the use of the various cuts of meat is desirable. Here appetite appeal is very important. The successful dietitian is one who can use the same kind of meat many times and have it look and taste different. Nothing is less appetizing than to have the meal come to the table day after day looking and tasting just like the previous meal.

With these thoughts before us let us consider the so-called cheaper cuts of meat with the wide variety they make possible. The round, rump, shanks, plate, flanks and chuck constitute three quarters of the weight of the entire carcass. Because the demand is for the loins and steaks that need no special skill in preparation, the heavier cuts are less expensive. While the long fibre which is characteristic of these cuts requires skill to prepare, so far as nourishment is concerned we find that there is practically no difference. For instance, we find that a pound of medium fat beef rump contains 1,400 calories of fuel value and a chuck 1,105.

Having established a logical reason for these cuts being cheaper and realizing that there is practically no nutritive difference between them and the higher priced cuts, let us consider what skill is necessary to make them palatable.

One principle of cookery which will always govern is to subject the meat to the greatest heat first. Brown thoroughly the entire outside surface. This

will keep in the natural juices of the meat. Then heat and add whatever liquid you have decided to use. Cover the pan tightly, reduce the heat and allow the meat to cook slowly until tender. During the entrie process of cooking, after the liquid has been added, the temperature should be below the boiling point.

The seasoning of any dish is important to make it palatable. The enormous shipping facilities of today enable us to procure an endless variety of spices, herbs and seasonings. These make possible so many combinations that one seldom needs to use the same flavor twice. Thus two meat dishes, although they are made from similar cuts, need not taste the same.

For some who do not care for the piquant flavor of the spices, or in cases where the carbohydrate content of the vegetable may be desirable, the vegetables may be added to the meat and cooked with it. In case of children or others who think they don't like certain vegetables such as carrots or onions, the vegetables may be removed from the juice before the meat is served.

Next is the appearance of the dish. If you have ever had a long siege of illness you can sympathize with the person who will turn away leaving his meal untouched or the one who will eat it under protest. It is so easy to make a little change in the appearance of a dish. Have the portion neat and the garnishings fresh and clean. There is every reason why the hospital should be genuinely concerned over the appearance of a tray no matter how strict the diet of the patient.

Such points are important also when serving the meals of the workers, as they help to eliminate waste. A hard working man or woman will eat all the food on his plate if it is well seasoned and appetizing in its appearance.

NEUROLOGY.

R. F. Leinbach, M.D., Dept. Editor.

Etiology of Lethargic Encephalitis.

Loewe and Straus report from the Mount Sinai Hospital, New York, the production of typical clinical symptoms of Lethargic Encephalitis in rabbits and monkeys by injection of Berkfeld filtrates of brain material naso-pharyngeal swabs and nasal washings from cases of this disease in man. They have also cultivated on Noguchi ascitic tissue culture media a minute filterable organism with which they have produced the disease in the animals mentioned by the injection of the fourth, fifth, sixth, eighth and even the eleventh generations and have been able to recover the organism again in fifty per cent of their cases. Control experiments carried out from diseases other than lethargic encephalitis were negative.

Levaditi and Harvier in France have partially confirmed the observations of Loewe and Straus and in addition have found guinea pigs also susceptible to the disease. This work seems probably the most significant which has been brought out with regard to the causation of Lethargic Encephalitis.—Journal of Infectious Diseases, Oct., 1920.

Surgery of the Vegetative Nervous System.

The literature of the past eight or ten years is studded with reports dealing with the physiology, pharmacology and clinical manifestations in disease of the Sympathetic and Para-sympathetic nervous system. Surgery has scarcely invaded this territory as yet. However, Jennesco has recently reported in the Bulletin of the French Academy of Medicine the complete and lasting (four years) cure of a case of severe intractable Angina Pectoris by the resection of the left cervical sympathetic nerve. The rationale of this procedure consists in the destruction of the centripetal pathhway for the reflex producing the painful vascular crises characteristic of this condition. This procedure he claims has never before been carried out for the cure of Angina Pectoris.

In the past four or five years Leriche in Lyons, France, has repeatedly car-

ried out a procedure of stripping and resecting the sheath of a vessel with its contained sympathetic nerves (Peri-Arterial Sympathectomy) in order to influence regional trophic conditions. The measure has not attracted any great attention in this country. However, we find that in 1915 Crile reported having divided the cervical sympathetics in connection with the excision of the supra renal gland and approximately three-fourths of the thyroid gland in eleven Epileptics, three Raynauds Disease, one Cardio-Vascular Disease and one Diabetic. This procedure was original with him and was devised as a measure of lessening what he denominated the "kinetic drive." Crile assures us that the procedure which he carried out do not interfere with normal functions in man or in animals. When we consider the important functions performed by the vegetative nervous system in the maintenance of balanced action between related viscera and vaso-motor and other automatic reflexes, it does not appear that the surgery of the sympathetic nervous system will ever attain any great importance as a therapeutic procedure. However, it is quite possible that cervical sympathectomy may ultimately become a procedure of limited value. Indications for its application may be found in such cases as that reported by Jennesco.

Syphilis of the Nervons System.

The 1920 session of the Neurological Society of Paris was devoted to a consideration of the symptomatology of syphilis of the nervous system. This session which was a very important one and directed by Sicard occupied itself with certain phases of this great problem; viz: (1) The question of the existence of a strain of the syphilitic virus with a special affinity for the nervous system; (2) whether syphilis of the nervous system presents itself in varied forms depending on a primary vascular invasion as in syphilitic meningitis with secondary parenchymetous changes on the one hand, and with primary parenchymetous lesions with secondary vascular and meningeal changes as in tabes and general paralysis; (3) the serological diagnosis, and (4) the treatment of syphilis of the nervous system. Opinions prevailing at this meeting indicate that the virus of syphilis is probably single and that there is no special strain with an affinity for nervous tissue. The opinion also prevailed that there is but a single form of syphilis of the nervous system, so far as the route of invasion is concerned, and that syphilis of the nervous system probably always begins through vascular involvement, with parenchymetous lesions, such as seen in tabes and general paralysis, as secondary processes. Both tabes and general paralysis should be given careful anti-syphilitic treatment, as, while general paralysis offers little prospect of improvement, tabes presents a more hopeful outlook. The intra-spinal treatment of syphilis of the nervous system has never gained an influential following in France.

CLINICAL AND PROFESSIONAL NOTES

J. Allison Hodges, M.D.

FURTHER CONSIDERATION OF PITUITARY HEADACHES.

In view of the fact that several letters have been received ,since the publication of last month, requesting substantially the same facts, namely, more definite details of the clinical picture of Pituitary cases exhibiting "headaches" as a dominant feature, the following is submitted:

These patients, whether apparently well developed or poorly nourished, usually show signs of depression, either physical or mental. They are tired, and easily exhausted from effort or exercise, and usually are forgetful, and mentally sluggish. Occasionally, they yawn rather continuously, and feel sleepy or dopey, and are without initiative, and sometimes slightly irritable if urged to undertake physical activities.

In cases in children, there are apt to be evidences of mental retardation, with probable deficient moral qualities noticeable on further examination. Personally, these patients are apt to exhibit evidences of too much or too little growth of hair over the body, or irregular distribution of the same. Usually, the hair is apt to be coarse and dark, and to grow very low down over the forehead and at the temples, and probably down the cervical spine; it is abundant over the arms and legs "with a curious change in the male to the female type, and in the female to the

male." The eyebrows are of the nasal type, and are heavy and long, often meeting in the midline over the nose. In females there may be a tendency to a moustache and to a sparse distribution of hair in front of the ears, and long hairs may grow upon the back, the chest or the abdomen. The bones show changes, and are either long or broad, depending upon the age when the metabolism was disturbed. The eyes are too close together or too far apart, and the fundae eye changes are generally negligible, except in tumor cases, and the jaw is large and the teeth are either widely spaced or unusually broad. The sugar tolerance is either too high or too low, and the pulse and blood pressure are uniformly low. There may be a super-abundance of adipose tissue, and sometimes rather intractable constipation, and in women, amenorrhea. The white line of sergent is usually very marked. Other symptoms present in this class of cases were rather fully noted in the previous article and in The Metabolist, and will not be repeated here.

The majority of these signs and symptoms are apt to be present in cases that have "headache" as the predominant characteristic, and as this symptoms is really the sentinel to give the alarm in the approaching or complete dysfunction of the Pituitary gland, great importance should be attached to it, for appropriate Pituitary therapy at this time, carefully followed, obtains the most satisfactory results.

In studying these cases it is always wise to observe carefully whether or not there may be other glands involved at the same time, for some of these may be stimulators of the Pituitary function, or may be acting independently, or in association with the dysfunction of the Pituitary.

Literature on this subject is scant and scattered, and the above details of this type of cases is gleaned from personal observation and the experience of others, and represents the majority of such invasions of Pituitary disease. It is hoped that practitioners, by noting these facts, may be enabled to diagnose some hitherto obscure headaches, and especially to recognize this symptom as the precursor of other developments that may follow; for the important point is that early recognition of Pituitary disease, of which this "headache" symptom is usually the first signal of danger and distress, is the only scientific and successful guarantee for its probable remedial relief.

Nurses Corner

Edith M. Redwine, R. N., Dept. Editor

North Carolina State Nurses Association—Nineteenth Annual Meeting.

The nineteenth annual meeting of the North Carolina State Nurses Association will be held at Wrightsville Beach, June 13-16, 1921.

TENTATIVE PROGRAM.

Monday, June 13, 8 P. M.

Social Program—Arranged by Wilmington Nurses.

Tuesday, June 14.

10 a. m.—Business session.
2 p. m.—Private duty section.
8 p .m.—Private duty section, P. H. conference.
Miss Hettie Reinhardt, Charlotte, chairman.

Wednesday, June 15.

9-10 a. m.—Advisory council.
10 a. m.—Public health.
2 p. m.—Public health.
8 p. m.—Public health.
Miss Katharine Myers, Raleigh, chairman.

Thursday, June 16.

9 a. m.—Business session.

10 a. m.—League of Nursing Education.

2 p. m.—League of Nursing Education.

8 p. m.—League of Nursing Education.

Miss Edith M. Redwine, Monroe, chairman.

Round Tables—Districts, Presidents, Red Cross, State Committees and others on request.

Mrs. Dorothy Hayden, President.
Miss Carolyn Miller, Secretary.

THE WORK OF THE PUBLIC HEALTH NURSE IN NORTH CAROLINA.

(Continued from March Issue)

Women and Girls' Clubs Furnish Health Opportunities.

The intimate contact between the nurse and the women and girls of her community is accomplished in no more effective way than through a participation in the neighborhood meetings of the women's organization and at Murphy the public health nurse, Miss Miranda Bradley, uses such meetings to give health talks and to create interest in health matters. Miss Bradley has even succeeded in organizing a girls' club for a given group where such an organization was needed and she is thus able to use these club members as able lieutenants in her work for county health.

One hundred and thirty-three visits for the month of January is the record set by Miss Bradley and when it is said that 96 of these were nursing visits some idea of the extent of her service to the community will be understood.

Additional health work is done in this same county (Duplin) at Kenansville, where the public health nursing is in charge of Miss Lillian M. George, who covers the county territory unreached by Miss Bradley. Much of the work done by Miss Bradley has been of an infant welfare and pre-natal character and the value of such work is too well understood to need explanation here.

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100 Child Welfare Visits Paid in Durham County.

One hundred visits paid in the interest of child welfare work in a single month was reported by Miss Mamie H. Nunnally, of Durham county, this being just one-third of the total number of visits made in the interest of community health throughout the month. Miss Nunnally includes in her health work special talks to mothers and to young girls on the care and protection of babies, while sick babies to the number of 70 have come under her special attention and 12 mothers have been given individual instruction in the care of their little ones by this guardian of the health of mothers and babies.

Laboratory Service, Dietetic Work and Instruction to Midwives Mark Work of Public Health Nurse at Edgecombe County.

The field covered by Miss Clara Ross, the Edgecombe county public health nurse, included various services for January, one feature being a talk on "Milk and Its Relation to Health," delivered to an audience of 500. Another feature was supplying 62 midwives with silver nitrate as required by the State Board of Health, and the directing of a meeting of the Edgecombe county meeting of midwives. This meeting included instruction to midwives and a series of talks given by physicians of the county.

Miss Ross also did much valuable work in the schools, including the weighing of 400 children, the giving of 26 talks to pupils, the establishing of the health crusade in one school, the inspection of one school building and premises and a conference with teachers to instruct in the requisites for the physical examination of the school children.

In addition the routein work of the public health nurse was not neglected, a total of 174 visits being made throughout the county and 154 cases given attention by the nurse.

Health Crusade in Thirteen Schools in Cumberland County.

Miss Katherine Farmer, the public health nurse of Cumberland county, with headquarters at Fayetteville, has introduced the rudiments of health education into 10 county and three city schools in Cumberland county through the health crusade which gives to each individual child an understanding of health rules and an incentive to follow them because of the competitive feature of the work caused by every other child doing the same health "chores" and the individual effort to do them better than his neighbors. Health habits thus formed in childhood become fixed throughout life and any movement which encourages such habits in children and impresses their importance on parents and teachers, is a movement which merits universal indorsement.

The fact that Miss Eudora Sornberger, the public health nurse in Gran-

ville county, vaccinated 280 persons is convincing evidence of the assistance that she is to the county health officer. In addition to this service, of course, she conducted the regular nursing routine, paying 156 visits, seven of these visits being made after nightfall and 119 of them being strictly nursing visits.

Lack of Transportation Hinders Nurse's Work.

Miss Margaret Harry, who has carried some of the first health messages ever heard by them to the people of Highland, N. C., finds her work materially handicapped by lack of adequate transportation facilities, but nevertheless she paid a total of 105 visits during the month of January and included in her services to the sick of the community an active consideration of a community house for the town and a camp for sick children during the summer.

Miss Harry is making of her service for these mountain people a high calling and the reward is already seen in many improved health conditions of the county.

Controlling Contagion in Lenoir County.

Talks to children on communicable diseases, supplying sanitary drinking cups and distributing sputum cups to tuberculosis patients were special features of the work of Miss Nettie Simpson, public health nurse for Lenoir county, N. C., for the month of January.

Mothers Instructed in Baby-Care.

Thirty mothers were given individual and practical instruction in the care of their babies by Miss Ellie C. Nelson of Lincoln county, who found this a much needed piece of work to be done in her territory. Miss Nelson reports having made 33 pre-natal and 54 infant welfare visits during the month.

179 Patients Examined for Tuberculosis in Robeson County.

The public health nurse in Robeson county gave much time during the month to a tuberculosis clinic established for diagnostic purposes in the county and of the 179 patients examined 29 were found to be positive cases, 10 doubtful and nine probable.

Nutrition Work Planned for Moore County Schools.

The children in the schools of Moore county are very probably to have nutrition classes, according to the report of Miss Mabel Craft, public health nurse, in that county. Miss Craft introduced the modern health crusade in 19 schools and enrolled 600 children. Miss Craft visited 22 schools, gave 21 talks to pupils in class and organized a Little Mothers' League with a membership of 17 young girls to whom she gave practical instruction and demonstration in the care of babies and young children.

Health Taught in Posters, Stories and Films.

At New Bern health was impressed upon the people, especially upon the children in the city schools through a series of moving picture films showing "Jinks" and the "Modern Health Crusade" and by appropriate Cho Cho, or health clown posters and stories on health to first grade teachers. Miss Lucy H. Higgs, the public health nurse for this county, thus passed on the health messages to the teachers who in turn transmitted them to the public.

Popular Talks on Health Given in Randolyh County.

Twelve talks on various health subjects were given by Mrs. Mildren Hargrave, the public health nurse of Randolph county, who followed her examination of the children in the rural schools by a fifteen-minute talk in each room. These talks coupled closely with the examinations of the children served to impress them with the importance of the work done.

Children the Principal Object of Health Work at Salisbury.

The children in the schools at Salisbury are taught the use of the tooth brush by the public health nurse, Miss M. B. Lynch, and in one school each child was given a tooth brush, making the number distributed amount to 108. The teachers in the colored school were interested in the care of the children's teeth and information was extended to them. The examination of the children in one grade in which 22 were enrolled showed that 16 had diseased tonsils. A clinic is planned for this county in the near future to care for such cases.

(*Continued in May Issue.*)

PROGRAM OF SIXTY-EIGHTH ANNUAL SESSION OF THE MEDICAL SOCIETY OF THE STATE OF NORTH CAROLINA, ELEVENTH ANNUAL SESSION NORTH CAROLINA HEALTH OFFICERS' ASSOCIATION, AND THIRD ANNUAL SESSION NORTH CAROLINA HOSPITAL ASSOCIATION.

OFFICERS, 1920-1921

President—Dr. Thomas E. Anderson, Statesville, N. C.
First Vice-President—Dr. C. S. Lawrence, Winston-Salem, N. C.
Second Vice-President—Dr. W. H. Ward, Plymouth, N. C.
Third Vice-President—Dr. John W. Manning, Durham, N. C.
Secretary-Treasurer—Dr. Benj. K. Hays, Ft. Bayard, N. M.
Acting Secretary-Treasurer—Dr. L. B. McBrayer, Sanatorium, N. C.

COUNCILORS, 1919-1922

First District—Dr. B. F. Halsey, Roper, N. C.
Second District—Dr. J. C. Rodman, Washington, N. C.
Third District—Dr. J. B. Cranmer, Wilmington, N. C.
Fourth District—Dr. E. T. Dickinson, Wilson, N. C.
Fifth District—Dr. A. McNiel Blair, Southern Pines, N. C.
Sixth District—Dr. W. C. Horton, Raleigh, N. C.
Seventh District—Dr. B. J. Witherspoon, Charlotte, N. C.
Eighth District—Dr. J. K. Pepper, Winston-Salem, N. C.
Ninth District—Dr. M. R. Adams, Statesville, N. C.
Tenth District—Dr. Eugene B. Glenn, Asheville, N. C.

CHAIRMEN OF SECTIONS, 1921

Public Health and Education—Dr. Chas. P. Mangum, Kinston, N. C.
Surgery—Dr. J. T. Burrus, High Point, N. C.
Eye, Ear, Nose and Throat—Dr. H. H. Briggs, Asheville, N. C.
Gynecology and Obstetrics—Dr. Moir S. Martin, Mt. Airy, N. C.
Pediatrics—Dr. Yates Faison, Charlotte, N. C.
Practice of Medicine—Dr. F. M. Hanes, Winston-Salem, N. C.
Chemistry, Materia Medica and Therapeutics—Dr. Ernest S. Bulluck, Wilmington, N. C.
Anatomy, Physiology and Bacteriology—Dr. Paul H. Ringer, Asheville, N. C.

COMMITTEE ON SCIENTIFIC WORK

Dr. E. J. Wood, Chairman, Wilmington, N. C.; Dr. Richard Duffy, New Bern, N. C.; Dr. C. A. Shore, Raleigh, N. C.

COMMITTEE ON PUBLICATION

Dr. P. P. McCain, Chairman, Sanatorium, N. C.; Dr. C. A. Julian, Thomasville, N. C.; Dr. W. L. Dunn, Asheville, N. C.

COMMITTEE ON OBITUARIES

Dr. E. G. Moore, Chairman, Elm City, N. C.; Dr. E. J. Wood, Wilmington, N. C.; Dr. B. O. Edwards, Asheville, N. C.; Dr. N. D. Bitting, Durham, N. C.

COMMITTEE ON PUBLIC POLICY AND LEGISLATION

Dr. H. A. Royster, Chairman, Raleigh, N. C.; Dr. L. B. McBrayer, Sanatorium, N. C.; Dr. Cyrus Thompson, Jacksonville, N. C.

COMMITTEE ON FINANCE

Dr. J. W. Long, Chairman, Greensboro, N C.; Dr. E. S. Bulluck, Wilmington, N. C.; Dr. E. B. Glenn, Asheville, N. C.

DELEGATES TO AMERICAN MEDICAL ASSOCIATION

Dr. J. Q. Myers, 1920 and 1921, Charlotte, N. C.; Dr. A. S. Boice, 1919 and 1920, Rocky Mount, N. C.

Alternates

Dr. C. L. Minor, 1920 and 1921, Asheville, N. C.; Dr. Isaac M. Taylor, 1919 and 1920, Morganton, N. C.

DELEGATES TO VIRGINIA MEDICAL SOCIETY

Dr. F. M. Hanes, Winston-Salem, N. C.; Dr. R. L. Kendrick, Elizabeth City, N. C.; Dr. B. C. Nalle, Charlotte, N. C.

DELEGATES TO THE SOUTH CAROLINA MEDICAL SOCIETY

Dr. D. A. Stanton, High Point, N. C.; Dr. W. A. Monroe, Sanford, N. C.; Dr. W. R. McCain, Waxhaw, N. C.

COMMITTEE ON SINGLE EXAMINING BOARD

Dr. J. F. Highsmith, Chairman, Fayetteville, N. C.; Dr. J. P. Munroe, Charlotte, N. C.; Dr. H. H. Newman, Salisbury, N. C.; Dr. E. T. Dickinson, Wilson, N. C.; Dr. H. A. Royster, Raleigh, N. C.

COMMITTEE TO RECEIVE AND HANDLE FUNDS OF EXAMINING BOARD

Dr. M. L. Stevens, Chairman, Asheville, N. C.; Dr. J. F. Highsmith, Fayetteville, N. C.; Dr. J. M. Parrott, Kinston, N. C.

BOARD OF MEDICAL EXAMINERS OF THE STATE OF NORTH CAROLINA, 1920-1926

Anatomy and Embryology—Dr. L. A. Crowell, President, Lincolnton, N. C.
Obstetrics, Gynecology and Pedriatrics—Dr. K. P. B. Bonner, Secretary-Treasurer, Morehead City, N. C.
Chemistry, Hygiene and Physiology—Dr. W. M. Jones, Greensboro, N. C.
Bacteriology, Histology and Pathology—Dr. C. A. Shore, Raleigh, N. C.
Materia Medica, Therapeutics and Pharmacology—Dr. J. G. Murphy, Wilmington, N. C.
Practice of Medicine—Dr. W. P. Holt, Duke, N. C.
Surgery—Dr. L. N. Glenn, Gastonia, N. C.

STATE BOARD OF EXAMINERS FOR NURSES

Miss Lois A. Toomer, President, Wilmington, N. C.
Miss Effie E. Cain, Secretary-Treasurer, Salisbury, N. C.
Miss Mary Laxton, Biltmore, N. C.
Dr. J. M. Parrott, 1920 (appointed to fill vacancy), Kinston, N. C.
Dr. C. F. Strosnider, 1918-19-20, Goldsboro, N. C.

COMMITTEE ON ARRANGEMENTS

Dr. L. B. McBrayer, Chairman, Sanatorium, N. C.; Dr. A. McNeil Blair, Vice-Chairman, Southern Pines, N. C.

ENTERTAINMENT COMMITTEE

Moore County—Dr. A. McNiel Blair, Chairman, Southern Pines; Dr. M. E. Street, Glendon; Dr. J. W. Achron, Pine Bluff; Dr. A. McN. Blue, Carthage; Dr. H. E. Bowman, Aberdeen; Dr. J. Franklin Davis, High Falls; Dr. C. T. Grier, Carthage; Dr. L. B. McBrayer, Sanatorium; Dr. A. A. McDonald, Jackson Springs; Dr. A. H. McLeod, Aberdeen; Dr. Gilbert M. McLeod, Carthage; Dr. W. W. Marr, Pinehurst; Dr. W. C. Mudgett, Southern Pines; Dr. Henry B. Shields, Carthage; Dr. Wm. P. Sweet, Southern Pines; Dr. Fred W. Thompson, Pine Bluff; Dr. R. G. Rosser, Vass; Dr. W. M. McDuffie, Hemp.

Montgomery County—Dr. C. Daligney, Troy.

Richmond County—Dr. W. D. James, Hamlet.

Scotland County—Dr. J. G. Pate, Gibson.

Chatham County—Dr. J. D. Edwards Siler City.

Lee County—Dr. W. A. Monroe. Sanford.

Harnett County—Dr. J. W. Halford, Lillington.

Cumberland County—Dr. K. G. Averett, Cedar Creek.

Robeson County—Dr. N. A. Thompson, Lumberton.

Hoke County—Dr. R. McBrayer, Sanatorium.

Committee on Automobiles—Dr. W. C. Mudgett, Chairman, Southern Pines; Dr. W. W. Marr, Associate Chairman, Pinehurst; Dr. Wm. P. Sweet, Southern Pines; Dr. A. McN. Blue, Carthage; Dr. H. E. Bowman, Aberdeen; Dr. A. H. McLeod, Aberdeen; Dr. A. H. McDonald, Jackson Springs; Dr. C. T. Grier, Carthage.

Reception Committee to Meet Trains at Aberdeen—Dr. A. H. McLeod, Aberdeen; Dr. H. E. Bowman, Aberdeen.

Ladies' Entertainment Committee—Mrs. A. McN. Blair, Chairman, Southern Pines; Mrs. W. C. Mudgett, Associate Chairman, Southern Pines; Mrs. A. A. McDonald, Jackson Springs; Mrs. C. T. Grier, Carthage; Mrs. R. G. Rosser, Vass; Mrs. H. B. Shields, Carthage; Mrs. W. P. Sweet, Southern Pines; Mrs. Fred Thompson, Pine Bluff; Mrs. J. Franklin Davis, High Falls; Mrs. M. E. Street, Glendon; Mrs. P. P. McCain, Sanatorium; Mrs. Gilbert McLeod, Carthage; Mrs. J. R. Page, Aberdeen; Mrs. R. McBrayer, Sanatorium; Mrs. W. W. Marr, Pinehurst; Mrs. R. N. Page, Southern Pines; Mrs. J. L. Spruill, Sanatorium, N. C.; Mrs. Leonard Tufts, Pinehurst; Mrs. L. B. McBrayer, Jr., Sanatorium; Mrs. H. E. Bowman, Aberdeen; Mrs. Frank Shamburger, Pine Bluff; Mrs. J. W. Achron, Pine Bluff; Mrs. U. L. Spence, Carthage; Mrs. H. F. Seawell, Carthage; Mrs. R. E. Wilie, Southern Pines; Miss Louise Blue, Aberdeen; Mrs. W. N. Hutt, West End; Mrs. T. B. Tyson, Carthage; Mrs. S. P. McConnell, Carthage; Miss MacNaughton, Samarcand Manor, Samarcand.

Entertainments — Running Races, Hurdle Races, Driving Races, Chariot Races, Ball, Trips to Samarcand Manor, Sanatorium, Farm Life School. (See Committee on Automobiles).

Luncheon served in the Dining Room, Carolina Hotel, 1 to 2 p. m.

RESUME OF PROGRAM

Monday, April 25, 1921

9:30 a. m.—North Carolina Health Officers' Association.
2:30 p. m.—North Carolina Health Officers' Association (continuing).
8:30 p. m.—North Carolina Health Officers' Association (continuing).

Tuesday, April 26, 1921

9:00 a. m.—Opening Exercises (Music Room)
10:00 a. m.—North Carolina Hospital Association (Parlor).
11:00 a. m.—Section on Public Health and Education (Music Room).
11:00 a. m.—Section on Pediatrics (Dutch Room).
2:30 p. m.—Meeting of House of Delegates (Music Room, Holly Inn).
2:30 p. m.—North Carolina Hospital Association (Continuing—Parlor).
2:30 p. m.—Section on Pediatrics (Continuing—Dutch Room).
2:30 p. m.—Section on Practice of Medicine (Music Room).
2:30 p. m.—Section on Eye, Ear, Nose and Throat (Card Room).
8:00 p. m.—General Session (Music Room).

Wednesday, April 27, 1921

9:00 a. m.—Section on Surgery (Parlor).
9:00 a. m.—Section on Chemistry, Materia Medica, and Therapeutics (Music Room).
9:00 a. m.—Section on Eye, Ear, Nose and Throat (Card Room).
12:00 m.—Conjoint Session of the Medical Society of the State of North Carolina and the North Carolina State Board of Health.
3:00 p. m.—Horse Races.
6:00 p. m.—7:00 p. m.—Meeting of Secretaries of County Societies (Parlor).
8:00 p. m.—Report of Obituary Committee (Parlor).
9:00 p. m.—Ball.

Thursday, April 28, 1921.

9:00 a. m.—Section on Gynecology and Obstetrics (Music Room).
9:00 a. m.—Section on Anatomy, Physiology and Bacteriology (Card Room).
9:00 a. m.—Section on Surgery (Continuing Parlor).
11:00 a. m.—Report of House of Delegates (Music Room).

Registration in the foyer of the Carolina Hotel, Mr. A. W. Snow in charge.

If you have not paid your dues to the Medical Society of the State of North Carolina for 1921, see Mr. A. W. Snow at the registration desk.

GENERAL SESSIONS

Tuesday, April 26, 1921, 9:00 A. M.

(Opening Exercises—Music Room, Carolina Hotel)

Call to Order—Dr. L. B. McBrayer, Chairman, Committee on Arrangements, Sanatorium, N. C.

Invocation—G. A. Cheatham, D.D., Pinehurst.

Address of Welcome—Mr. Leonard Tufts, The Beloved, Owner of Pinehurst.

Address of Welcome—Dr. M. E. Street, President of Moore County Medical Society, Glendon, N. C.

Address of Welcome—Hon. U. L. Spence, of the Carthage Bar.

Response—Dr. Wm. deB. MacNider, Chapel Hill, N. C.

President's Address—Dr. T. E. Anderson, Statesville, N. C.

Tuesday, April 26, 1921, 2:30 P. M.

(Music Room, Holly Inn)

Meeting of House of Delegates.

Time and Place of subsequent meetings to be fixed by House of Delegates.

Tuesday, April 26, 1921, 8:00 P. M.

(Music Room)

Governor Cameron Morrison, Presiding

1. The Pathology of Gastric and Duodenal Ulcers and the Physiology following Posterior Gastroenterostomy (with lantern slides), Dr. Stanley P. Reiman, Pathologist, Lankenau Hospital, Philadelphia.

2. Dr. Stuart McGuire, Richmond, Va.

3. Social Responsibilities of Modern Medicine, Dr. Frederick R. Green, Secretary, Council on Health and Public Instruction, Chicago.

Wednesday, April 27, 1921, 12 M.

(Music Room)

Conjoint session of the Medical Society of the State of North Carolina and the North Carolina State Board of Health (Dr. J. Howell Way, President of State Board of Health, presiding).

MEMBERS OF THE STATE BOARD OF HEALTH

Dr. J. Howell Way, President, Waynesville, N. C.
Dr. Richard H. Lewis, Raleigh, N. C.
Col. J. L. Ludlow, C.E., Winston-Salem, N. C.
Dr. Thomas E. Anderson, Statesville, N. C.
Dr. Chas. O'H. Laughinghouse, Greenville, N. C.
Dr. F. R. Harris, Henderson, N. C.
Dr. Cyrus Thompson, Jacksonville, N. C.
Dr. A. J. Crowell, Charlotte, N. C.
Dr. E. J. Tucker, Roxboro, N. C.

EXECUTIVE STAFF OF THE STATE BOARD OF HEALTH

Secretary-Treasurer—Dr. W. S. Rankin, Raleigh, N. C.
Director Public Health Education—Mr. R. B. Wilson, Raleigh, N. C.
Director of Bureau of Tuberculosis—Dr. L. B. McBrayer, Sanatorium, N. C.
Director of Bureau of Medical Inspection of Schools—Dr. G. M. Cooper, Raleigh, N. C.
Director of Bureau of Public Health Nursing and Infant Hygiene—Miss Rose M. Ehrenfeld, R.N., Raleigh, N. C.
Deputy State Registrar—Dr. F. M. Register, Raleigh, N. C.
Director of Bureau of County Health Work—Dr. K. E. Miller, Raleigh, N. C.
Director of Bureau of Inspection and Sanitary Engineering—Mr. H. E. Miller, Raleigh, N. C.
Director of Bureau of Venereal Diseases—Dr. Millard Knowlton, Raleigh, N. C.
Director of State Laboratory of Hygiene—Dr. C. A. Shore, Raleigh, N. C.
State Epidemiologist—Dr. J. S. Mitchener, Raleigh, N. C.

ORDER OF BUSINESS

Report of work accomplished and recommendations.

Discussions.

New business.

Adjournment.

MEETING OF SECRETARIES OF COUNTY SOCIETIES

Wednesday, April 27, 1921, 6:00 to 7:00 P. M.

(Parlor)

Dr. T. E. Anderson, President, Statesville, N. C., presiding.

1. Importance of Medical Organizations—Dr. K. P. B. Bonner, Morehead City, N. C.

2. How to Get 100% Membership in a County Society—Dr. W. C. Horton, Secretary, Wake County Society; Dr. J. E. Cocke, Secretary, Buncombe County Society; Dr. J. Lester Ransom, Secretary, Mecklenburg County Society; Dr. E. R. Hardin, Secretary, Robeson County Society; Dr. P. J. Chester, Secretary, Pitt County Society; Dr. Moir S. Martin, Secretary, Surry County Society; Dr. F. H. Garriss, Secretary, Bertie County Society.

3. Importance of Sending in Reports and Answering Letters and Telegrams Promptly—Dr. L. B. McBrayer, Sanatorium, N. C.

Wednesday, April 27, 1921, 8:00 P. M.

(Parlor)

Report of Obituary Committee—Dr. E. G. Moore, Chairman, Elm City, N. C.; Dr. E. J. Wood, Wilmington, N. C.; Dr. B. O. Edwards, Asheville, N. C.; Dr. N. D. Bitting, Durham, N. C.

Luncheon served in the Dining Room, Carolina Hotel, 1:00 to 2:00 p. m.

Thursday, April 28, 1921, 11:00 A. M.

(Music Room)

Report of House of Delegates.

Installation of Officers.

Resolutions.

Adjournment.

SECTION MEETINGS

Tuesday, April 26, 1921, 11:00 A. M.

(Music Room)

SECTION ON PUBLIC HEALTH AND EDUCATION

Dr. C. P. Mangum, Chairman, Kinston, N. C.

(This program must be completed by 1 p. m.)

1. The Malarial Infected Home—Dr. W. T. Parrott, Kinston, N. C.

2. Sanitation of the Rural Home—Dr. H. L. Cook, Fayetteville, N. C.

3. Relation of Syphilis to Infant Mortality—Dr. Millard Knowlton, Raleigh, N. C.

4. Barnacles of Public Health Work—Dr. W. A. McPhaul, Health Officer, Charlotte, N. C.

5. Registration of Prospective Mothers—Miss Rose M. Ehrenfeld, Raleigh, N. C.

Tuesday, April 26, 1921, 11:00 A. M.

(Dutch Room)

SECTION ON PEDIATRICS

Dr. Yates Faison, Chairman, Charlotte, N. C.

1. Epidemic Acid-Intoxication—Dr. Yates Faison, Charlotte, N. C.

2. Some Modern Practices in Pediatrics—Dr. Albert S. Root, Raleigh, N. C.

3. Our Changing Attitude Toward the Nutritional Disturbances—Dr. William Weston.

4. Preventive Pediatrics and the Nutrition

Class—Dr. Frank Howard Richardson, Asheville, N. C.

5. Infant Mortality—Dr. A. McR. Crouch, Wilmington, N. C.

6. A Plea for More General Use of Toxin-Antitoxin—Dr. John R. Ashe, Charlotte, N. C.

7. Subject Unannounced—Dr. H. H. Harrison, Asheville, N. C.

Luncheon served in the Dining Room of the Carolina Hotel, 1 to 2 p. m.

Tuesday, April 26, 1921, 2:30 P. M.

(Dutch Room)

SECTION ON PEDIATRICS

(Continuing)

(This program must be completed by time of adjournment of this session).

Tuesday, April 26, 1921, 2:30 P. M.

(Music Room)

SECTION ON PRACTICE OF MEDICINE

Dr. F. M. Hanes, Chairman,

Winston-Salem, N. C.

(This section must finish program by time of adjournment this session).

1. Heart Diagnosis—Dr. Thompson Frazer, Asheville, N. C.

2. The Estimation of Cardiac Competence—Dr. J. M. Northington, Charlotte, N. C.

3. Aneurysm—Dr. T. M. Stanton, High Point, N. C.

4. The Abdominal Symptoms of Angina Pectoris—Dr. Hubert Haywood, Jr., Raleigh, N. C.

5. Report of Three Cases of Interesting Blood Conditions—Dr. R. L. Felts, Durham, N. C.

6. The Earlier Diagnosis of Tabes—Dr. E. J. Wood, Wilmington, N. C.

7. Hysteria—Dr. F. R. Taylor, High Point, N. C.

8. The Pathology of the Kidney when an Acute Injury is Superimposed on a Chronic Glomerulo-Nephritis: (Lantern Slides)—Dr. W. deB. MacNider, Chapel Hill, N. C.

9. Basal Metabolism and Blood Sugar in Hyperthyroidism and Pulmonary Tuberculosis, with a Method for the Indirect Estimation of an Increased Blood Sugar—Dr. R. McBrayer, Sanatorium, N. C.

10. The Treatment of Toxic Goiter (hyperthyroidism) by Radiation—Dr. R. H. Lafferty, Charlotte, N. C.

11. Lethargic Encephalitis—Dr. A. A. Barron, Charlotte, N. C.

12. Further Observation on a Direct Method of Biliary Drainage—Dr. Heath Nisbet, Charlotte, N. C.

13. The Menace of Drug Addiction—Suggestions for Its Eradication—Dr. L. E. Bisch, Asheville, N. C.

To be followed by a thorough general discussion of the physicians' part in enforcing the anti-narcotic law. The Government will be represented by Dr. C. A. Neves, Charlotte, and Mr. E. B. Menzies, Hickory, N. C.

14. Title to be Given—Dr. Thomas R. Boggs, Baltimore, Md. (By invitation).

15. A Country Doctor's Experience with the Flu—Dr. N. P. Coppedge, Biscoe, N. C.

16. Roentgen Rays in Acute Chest Condition—Dr. F. M. Hodges, Richmond, Va.

Tuesday, April 26, 1921, 2:30 P. M.

(Card Room)

SECTION ON EYE, EAR, NOSE AND THROAT

Dr. H. H. Briggs, Chairman, Asheville, N. C.

1. The Early Diagnosis of Pituitary Tumor From the Eye Findings—Dr. Henry L. Sloan, Charlotte, N. C.

2. Some Early Observations in Refractions—Dr. H. M. Bonner, Raleigh, N. C.

3. Sympathetic Ophthalmia—Dr. J. B. Wright, Raleigh, N. C.

4. The Safe Removal of Tonsils, where Surgery is Contra-Indicated, by the High Frequency Current—Dr. P. P. McCain, Sanatorium, N. C.

5. Enucleation Under Local Anaesthesia, with Report of Two Cases—Dr. Russell S. Beam, Lumberton, N. C.

6. Repair of Stenson's Duet, Report of Case—Dr. Ira M. Hardy, Kinston, N. C.

7. Lympho-sarcoma of Both Tonsils. Patient 47 Years of Age—Dr. W. W. Sawyer, Elizabeth City, N. C.

8. Diseases of Nasal Accessory Sinuses—Dr. O. J. Houser, Charlotte, N. C.

9. Report of Interesting Case of Nasal Polypus—Dr. J. G. Johnston, Charlotte, N. C.

10. The Preventive Measures of Ear Surgery—Dr. T. W. Davis, Winston-Salem, N. C.

11. Symposium on Mastoiditis (a) Conservative Mastoid Surgery—Dr. J. S. Murphy.

(b) Lateral Sinus Trombosis Complicating Acute Mastoiditis—Dr. H. H. Briggs, Asheville, N. C.

Luncheon will be served in the Dining Room of the Carolina Hotel, 1 to 2 p. m.

Wednesday, April 27, 1921, 9:00 P. M.

(Card Room)

SECTION ON EYE, EAR, NOSE AND THROAT

(continuing)

Wednesday, April 27, 1921, 9:00 A. M.

(Parlor Carolina Hotel)

SECTION ON SURGERY

Dr. J. T. Burrus, Chairman, High Point, N. C.

(If desired, this section can be continued Thursday morning in the Parlor of the Carolina).

1. A Review of the History of Surgery Previous to the Seventeenth Century—Dr. John T. Burrus, High Point, N. C.

2. Some Phases of Gall Bladder Surgery—Dr. N. D. Bitting, Durham, N. C.

3. Chronic Gastro and Deuodinal Ulcers—Dr. C. S. Lawrence, Winston-Salem, N. C.

4. Explanation of Some Obscure Abdominal Condition (Lantern Slides)—Dr. Thos. M. Green, Wilmington, N. C.

5. Surgical Treatment for the Permanent Cure of Major Trigeminal Neuralgia (Lantern Slides)—Dr. C. C. Coleman, Richmond, Va.

6. Radium Therapy as an Adjunct in Surgery in Inoperable Malignancy—Drs. W. D. and A. W. James, Hamlet, N. C.

7. Subject Unannounced—Dr. C. C. Phillips, Charlotte, N. C.

8. Calcification of the Ovaries, with Report of a Case—Dr. T. C. Bost, Charlotte, N. C.

9. Surgical Treatment of Tuberculosis of Spine—Dr. Alonzo Myers, Charlotte, N. C.

10. Penetrating and Perforating Wounds of the Abdomen—Dr. Foy Robinson, Durham, N. C.

11. Intestinal Obstructions—Dr. L. A. Crowell, Lincolnton, N. C.

12. Appendicitis Difficulties in Atypical Cases—Dr. C. E. Wilkerson, Randleman, N. C.

13. Surgical Signifiance of Vomiting—Dr. R. L. Gibbon, Charlotte, N. C.

14. Infection of the Bones (Lantern Slides) —Dr. W. F. Cole, Greensboro, N. C.

15. Subject Unannounced — Dr. Shuford, Hickory, N. C.

16. Ruptured Ulcers of Stomach and Duodenum, With Report of Nine Cases—Drs. Williams and Tankersley, Greensboro, N. C.

17. Symposium on Cancer—Dr. J. W. Long, Greensboro, N. C.

18. Early Importance of Diagnosis of Cancer of the Uterus—Dr. J. F. Highsmith, Fayetteville, N. C.

19. Cancer of the Prostate—Drs. A. J. Crowell and L. C. Todd, Charlotte, N. C.

20. Cancer of the Thyroid Glands—Dr. A. J. Brenizer, Charlotte, N. C.

21. Treatment of Cancer With Radium—Dr. Curtis F. Burnham, Baltimore, Md.

Wednesday, April 27, 1921, 9:00 A. M.

(Music Room)

SECTION ON CHEMISTRY, MATERIA MEDICA AND THERAPEUTICS

Dr. Ernest S. Bulluck, Chairman, Wilmington, N. C.

1. Tartar Emetic in Parasitic Diseases—Dr. E. J. Wood, Wilmington, N. C.

2. Treatment of Chronic Heart Disease—Dr. Douglas VanderHoof, Richmond, Va.

3. The Treatment of Heart Disease Before Decompensation—Dr. J. M. Hutchenson, Richmond, Va.

4. The Relation of the Phenol-Sulphon-Pthalein Functional Kidney Test and Retained Blood Nitrogen to Systolic and Diastolic Blood Pressure in the Prognosis in Cardio-Renal Disease—Dr. Wm. Allan, Charlotte, N. C.

5. The Value of Electric Light in Neuritis and in Infections—Dr. J. Allison Hodges, Richmond, Va.

6. Further Observation of Pituitary Epilepsy—Dr. Beverley R. Tucker, Richmond, Va.

7. Drug Therapy in Epilepsy—Dr. Victor R. Small, Raleigh, N. C.

8. The Treatment of the Emotions in Young People—Dr. Tom A. Williams, Washington, D. C.

9. On Rebellion Against Repression—Dr. James K. Hall, Richmond, Va.

10. Neurasthenia—Dr. W. C. Ashworth, Greensboro, N. C.

11. Suggestive Therapeutics Capitalized and Exploited—Dr. J. T. J. Battle, Greensboro, N. C.

12. Radium Therapy, Dr. Samuel Orr Black, Spartanburg, S. C.

13. The Treatment of Sarcoma With Radium (Lantern Slides)—Dr. S. W. Budd, Richmond, Va.

14. The Physical Properties of Radium—Dr. Clyde K. Hasley, Charlotte, N. C.

Wednesday, April 27, 1921, 12:00 M.

(Music Room)

Conjoint Session of the Medical Society of the State of North Carolina and the North Carolina State Board of Health.

Luncheon served in the Dining Room, Carolina Hotel, 1:00 to 2:00 P. M.

Wednesday, April 27, 1921, 3:00 to 5:00 P. M.

HORSE RACES

Compliments of the Pinehurst Jocky Club

Running, Hurdle, Driving

Chariot Races.

Dr. I. W. Faison, Dr. E. B. Glenn, Dr. E. J. Wood

Wednesday, April 27, 1921, 9:00 P. M.

Ball—Carolina Music Room

Thursday, April 28, 1921, 9:00 A. M.

(Music Room)

SECTION ON GYNECOLOGY AND OBSTETRICS

Dr. Moir S. Martin, Chairman, Mount Airy, N. C.

1. Pyelitis of Pregnancy and Puerperium—By Dr. J. D. Highsmith, Fayetteville, N. C.

2. Ectopic Pregnancy, Observations Drawn From a Study of 79 Cases—By Dr. J. W. Tankersley, Greensboro, N. C.

3. Report of Two Unusual Cases of Pregnancy—By Dr. J. R. Parker, Burlington, N. C.

4. The Influence of the Endocrine Glands Upon Certain Gynecological Conditions—By Dr. J. E. Stokes, Salisbury, N. C.

5. The Relation of Preventive Medicine to Gynecology—By Dr. Owen Smith, High Point, N. C.

6. Uterine Retrodisplacements (Lantern Slides)—By Dr. Parron Jarboe, Greensboro, N. C.

7. Malformation of the Uterus (Lantern Slides)—By Dr. H. A. Royster, Raleigh, N. C.

8. The Use of Intravenous Glucose in Certain Post-Operative Conditions—By Dr. A. de Talma Valk, Winston-Salem, N. C.

9. Parovarian Varicocele—By Dr. L. S. Booker, Durham, N. C.

10. Pelvic Infection—By Dr. B. S. Herring, Wilson, N. C.

11. Conservation of Ovaries or Indications for Cophorectomy—By Dr. E. S. Boice, Rocky Mount, N. C.

Thursday, April 28, 1921, 9:00 A. M.

(Card Room)

SECTION ON ANATOMY, PHYSIOLOGY, PATHOLOGY AND BACTERIOLOGY

Dr. Paul Ringer, Chairman, Asheville, N. C.

1. The Three R's in Medicine—Dr. Paul Ringer, Asheville, N. C.

2. Tuberculosis and Pseudo-Tuberculosis—Dr. James B. Bullitt, Chapel Hill, N. C.

Thursday, April 28, 1921, 11:00 A. M.

(Music Room)

Report House of Delegates.

Introduction of President 1921-22.

Resolutions.

Adjourn Sine Die.

NORTH CAROLINA HEALTH OFFICERS' ASSOCIATION

ELEVENTH ANNUAL SESSION

PINEHURST, MONDAY, APRIL 25, 1921

Dr. R. L. Carlton, President, Winston-Salem.
Dr. L. J. Smith, Vice-President, Wilson.
Dr. G. M. Cooper, Secretary-Treasurer, Raleigh.

PROGRAM

9:00 A. M.

1. Call to Order by the President.
2. Prayer—Dr. J. A. Morris, Oxford.
3. President's Annual Address—Teaching Health, R. L. Carlton, M.D., Winston-Salem.
4. Report of Secretary-Treasurer—G. M. Cooper, M.D., Raleigh.
5. Appointment of
(a) Committee on President's Address.
(b) Committee on Visitors and New Members.
(c) Auditing Committee.
(d) Committee on Resolutions.
(e) Other Committees.
6. A Simplified Venereal Disease Program—Millard Knowlton, M.D., U. S. P. H. Service.
7. Symposium on Maternity and Infant Welfare:
(a) Infant Mortality—A Definite Responsibility of Public Health Authorities—Wortham Wyatt, M.D., Winston-Salem.
(b) North Carolina Birth and Death Statistics with Particular Reference to Infant Welfare—F. M. Register, M.D., Raleigh.
(c) The Nurses' Relation to Infant Welfare—Miss Rose M. Ehrenfeld, R.N., Raleigh.
(d) The Midwife a Factor in Maternal and Infant Welfare—Miss Katherine Myers, R.N., Raleigh.
(e) Discussion—Opened by J. B. Sidbury, M.D., Wilmington.

3:00 P. M.

1. Effective Quarantine Work:
(a) Getting Cases Reported Early—P. J. Chester, M.D., Greenville.
(b) The School as One Means—R. S. Bailey, M.D., Henderson.
(c) Time of Quarantine—E. F. Long, M.D., Raleigh.
(d) Control of Preventable Disease by Immunization—John H. Janney, M.D., Washington.
(e) Discussion.
2. Tuberculosis Diagnostic Clinics—J. L. Spruill, M.D., State Sanatorium.
3. General Public Health Nursing:
(a) The School Nurse—Duties and Methods—Miss Percye Powers, R.N., Winston-Salem.
(b) Reaching the County School Population—Mrs. Alice T. Bassett, R.N., Newton.
(c) Getting County Authorities Interested—Mrs. Mildred Hargrave, R.N., Asheboro.
(d) Reaching the Adult Country People—Miss Lula B. Saucer, R.N., Weldon.
(e) The Modern Health Crusade—Mrs. Dorothy Hayden, R.N., Greensboro.
(f) Discussion.

8:00 P. M.

1. Backward and Downward Trend of the Human Family in America—J. E. Malone, M.D., Louisburg.
2. Informal Round Table Conference Conducted by the President—Subjects: Whatsoever Things Concern a Health Officer.
3. Reports of Committees.
4. Adoption of Resolutions.
5. Election of Officers.
6. Adjournment.

NOTE—No paper shall exceed fifteen minutes, and no paper which is included in a symposium shall exceed ten minutes. Discussions are limited to five minutes and no person allowed the floor more than one time—Program Committee Ruling. The above restrictions do not, of course, apply to the President's address or to invited guests from without the State.

Third Annual Meeting of the North Carolina Hospital Association,

April 26, 1921

President—Dr. James M. Parrott, Kinston, N. C.
First Vice-President—Dr. James R. Alexander, Charlotte, N. C.
Second Vice-President—Dr. P. R. McFayden, Concord, N. C.
Third Vice-President—Miss Gilbert Muse, High Point, N. C.
Secretary-Treasurer—Dr. John Q. Myers, Charlotte, N. C.

Executive Committee

Dr. John T. Burrus, High Point, N. C.
Dr. Jacob F. Highsmith, Fayetteville, N. C.
Dr. John P. Munroe, Charlotte, N. C.

PROGRAM

10 A. M.

Presidential Address—Dr. James M. Parrott, Kinston, N. C.

"Training Schools as Educational Institutions"—Miss Effie Cain, R.N., Secretary N. C. Board Examiners for Trained Nurses.

"Hospital Records, The Highsmith Hospital"—Miss E. A. Kelly, Fayetteville, N. C.

"Development of Public Health Nursing and the Co-operation With the Local Hospital"—Miss Columbia Mund, Consolidated Boards of Health, City of Wilmington and New Hanover County, Wilmington, N. C.

"The advantage of a Full-Time Instructor to the Training School"—Miss Virginia O. McKay, James Walker Memorial Hospital, Wilmington, N. C.

"Some of the Problems Confronting the Future Semi-Private Hospital"—Dr. J. F. Highsmith, Highsmith Hospital, Fayetteville, N. C.

"Some Constructive Criticism of Hospital Management in North Carolina"—Dr. Thomas M. Jordan, State Hospital, Dix Hill, Raleigh, N. C.

"Hospital Records Illustrated"—Dr. J. W. Long, Greensboro, N. C.

"Special Training for Nurses"—Dr. Wade H. Anderson, the Moore-Herring Hospital, Wilson, N. C.

"The Value of the Small Hospital to the Community"—Mrs. Walter Hughson, General Manager, Grace Hospital, Morganton, N. C.

Dr. Alonzo Myers, Charlotte, N. C., sails for Europe the 20th of April to do work in his specialty of orthopaedic surgery. Dr. Myers spent about three years, previous to and during the war, as orthopaedic surgeon in Europe, and will on this trip be with Zimmerman and Calos in Paris and Jones in Liverpool.

Dr. J. P. Matheson, Charlotte, N. C., admits that Paris still holds attractions for him and that he will spend two months visiting clinics in Europe and England—and incidentally resting, too. He will sail from New York April 20 and return to Bosten in time for A. M. A. meeting.

Wanted—Surgical assistantship to busy surgeon, Virginia or Carolinas. B.S., M.D. A-1 school two years, hospital and surgical training, ambitious, industrious, ethical. Age 28. Frank L. Ray, Chesnee, S. C.

Red Cross Classes in Home Hygiene and Care of the Sick Taught in Watauga County.

The health work involved in regular class room instruction given to women and girls through the Red Cross courses in home hygiene and care of the sick has been thoroughly done by Miss Stella McCartney, the Watauga county public health nurse.

At the Appalachian Training School in this county three classes were maintained and the personnel of the classes were enrolled from the student body. A unique feature of the work was that 10 of the boy pupils asked to be allowed to take the course; they followed to its conclusion, passed the required examinations and each one received the Red Cross certificate for proficiency, the full number awarded in this class being 37.

The Clergy in Vance County Interested in Health Work.

The public health nurse in Vance county reports that six members of the local clergy were present when she talked to the children in sixteen schools on health subjects. This nurse, Miss Agnes Harris, inspected 14 school buildings, talked to audiences numbering 1,363 in the schools, distributed 896 tubes of tooth paste and vaccinated 515 school children.

Nurses Given Practical Instruction in Wake County.

The public health nurse of Wake county spent three weeks during January in instructing in the care of contagious diseases and in school work. Four hundred and eighty children were enlisted in the health crusade and 538 attended health lectures given by the nurse, Miss Maude L. Henley.

Removal of Gallbladder Without Drainage.

A. Murat Willis, Richmond, Va. (Journal A. M. A., March 12, 1921), emphasizes again that the omission of drainage after the majority of the operations of cholecystectomy is a procedure that is perfectly safe, and that the results obtained by such omission are distinctly superior to those following the older method of packing or draining with gauze.

Tribute We Paid Germany.

According to a recent newspaper clipping "the sum of $500,000 has been given by Drs. Schamberg, Kolmer and Raiziss to the Dermatological Research Laboratories for the support of medical research." The clipping states further that the amount represents the profits received during the war from the sale of the arsphenamin which was manufactured—first as a war-time necessity and later as a licensed preparation—at the Dermatological Research Laboratories, under the control of these men. When it is recalled that the drug was sold at about one-third the pre-war price of "salvarsan" of German make, and also that the drug was prepared during the economic conditions attendant on the war, the vastly greater toll collected by the German proprietors at the time they controlled the sale of "salvarsan" may be easily calculated. It is indeed to the credit of the American workers that their gains—modest in comparison to those of the Germans—have been dedicated to altruistic purposes.—Jour. A. M. A., March 12, 1921.

Pneumatic Rupture of Intestine.

The patient whose case is reported by J. R. Buchbinder, Chicago (Journal A. M. A., Feb. 19, 1921), was the victim of a "joke." A fellow workman placed the nozzle of an air hose close to his rectum, while he was stooping over. The nozzle delivered a pressure of 85

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pounds. The man immediately screamed with pain and fell to the floor in collapse. When seen two hours later the patient's general appearance was that of profound shock. The abdomen was tremendously distended. The tension within the abdomen was so great that the palpating hand could make no impression on it. Under procain anesthesia, a left rectus incision was made. The transversalis fascia was not incised, but sharp nosed forceps were pushed through in order to control the escape of air. The fascia tore like wet paper under the great tension; the air rushed out with a report, and the abdominal wall dropped in. The sudden escape of air nearly proved fatal, but after a few moments the patient rallied, and his general condition seemed much improved. Exploration revealed a tear in the convexity of the sigmoid, which admitted three fingers. For a distance of from 6 to 8 inches, the serosa was stripped off and ribboned. The colon was collapsed and practically empty. The mucosa had herniated through the tear in the serosa, and was frayed out as though it had been scraped. The meso-sigmoid was studded with small hemorrhages; but there was very little blood and no loose fecal material in the peritoneum. No other lesion was demonstrable. The tear in the sigmoid was closed and the peritoneum was satured as well as could be with what was left of it. A loop of descending colon well above the injury was pulled out for a colostomy. The patient was put to bed and treated for shock, but died apparently without fully recovering therefrom, four hours later.

Pertussis Vaccine.

In summing up the prolific and somewhat contradictory literature on this subject, W. C. Davison, Baltimore (Journal A. M. A., Jan. 22, 1921) says it may be concluded that injections of Bordet-Gengou bacillus vaccines may have a slight though unreliable prophylactic effect, and that therapeutic inoculations are of practically no value. Further experiments are necessary to raise this procedure from the limbo of nonspecific therapy.

Southern Medicine and Surgery

VOL. LXXXIII CHARLOTTE, N. C., MAY, 1921. No. 5

MINUTES OF SPARTANBURG TRI-STATE MEETNG.

Thursday Morning Session February 17, 9:30 A. M.

The Executive Council reports an approved list of names for membership which are duly elected.

The Secretary-Treasurer, Dr. James K. Hall, reports:

The most pleasant feature of the secretary's report was the reading of those fifty-two applications for fellowship in the association.

When the secretaryship and treasurership was turned over to me after the Charlotte meeting a year ago, it carried with it an indebtedness of about $1,168 and an empty treasury. Since that we have collected $1,400 and standing against that collection is this indebtedness of $1,168. The expenses of the Charlotte meeting amounted to perhaps $150. The transactions of that meeting have not yet appeared in book form because we had no money with which to publish the transactions. So we have standing against that $1,400 collection the indebtedness of $1,168 which was turned over to me by Dr. Hughes and then the expense of the Charlotte meeting added to that and the expense of this meeting, whatever it turns out to be. It now costs three and one-half times as much to publish the transactions in book form as it did in the good old days five or six years ago. A good many members are still behind with their dues; so if all were to pay up promptly I imagine the treasury would have to its creidt $2,000. So far your treasurer has had to finance the expenses of the Charlotte meeting a year ago and the expense of the present meeting. But the association is now getting on higher ground financially and I have no doubt that a year from now, if the present enthusiasm keeps up, the association will probably be out of debt.

I forgot to announce—I believe I had it announced by letters to the members, that at the Charlotte meeting a year ago the annual dues were increased from $3.00 to $5.00.

I must say in explanation and in justice to my friend, Dr. R. E. Hughes that in my opinion this association owes its present life to him. (Applause.) I don't believe that to be true—I know it to be true. He has given himself unremittingly to this body since he sought fellowship in it years ago. He has given his time to it; he has given—I know he doesn't want me to say this—he has given his money to it so that nobody but the God who made him knows how much money this association owes him. We owe him again, not one, but many votes of thanks. Without his hearty co-operation and almost daily support since this office was turned over to me a year ago I could not be here before you today. His support, his advice, his help in every way has been of the greatest comfort and guidance to me, and through me to this association. I feel that I can say now what you already know, that through the activities and guidance of Dr. Hughes the association was kept alive during the dark days of the war and the dark days of the influenza when most of its members were either in Europe fighting for their country or at home ministering to influenza patients. During this dark period it was Dr. Hughes who kept this association alive. I feel that now, unlike Nicodemus of old, it has been made possible for this association to be "born again."

By a member—I move that the association give a rising vote of thanks to Dr. Hughes.

Motion seconded and carried.

By the Secretary — I feel like we ought to sing that grand old hymn—"Bringing in the Sheaves."

By Dr. Crowell, Charlotte, N. C.—I move that the Secretary's report be re-

ceived as information and that he be commended for his diligent work.

Motion seconded and carried.

By the President—I will say this—the secretary is an exceedingly modest man. I don't know why he does not report what he was instructed to report by the executive council. May be he wants to be elected again. I think he ought to be elected again. The executive council has recommended that the association, by reason of the fact that money is so scarce and printing so high and paper so high that you will authorize them to use their discretion about how the minutes of this meeting shall be published. That is putting it pretty broad. Heretofore we have published the minutes in nice stiff-back bound volumes, and the secretary told the council last night that the stiff-back volumes would cost about $1,200 as compared with $700 for the paper back. He also told us it was possible, if you wanted to establish an organ of the society—he was not sure — but that it might be possible to get some medical journal even for less than that. We want to know the will of this association about that. You can not expect the secretary-treasurer to spend his good money for publishing these proceedings. The proceedings for last year have not been published yet because there was no money with which to pay for the publication. The present secretary has been hustling around like the mischief and has gotten enough money to pay off all our debts and he says he is going to have those minutes published if the council will let him. It is possible that they will be published in a little different form from this because this is an expensive form. Will you allow the council to use their discretion about this? Or what do you want to do?

By Dr. J. N. Upshur, Richmond, Va.—It is a very good thing to have a journal as an organ for the society for the publication of the papers. That means the elimination of the publication of the transactions and then I think it is probable that the papers published in the journal are practically lost to the members afterwards. Then, besides, members sometimes elect and prefer to publish their papers in some other journal. We have had that condition of things in Virginia—we don't publish the transactions now but we have a journal that is the organ of the society and the papers of the society are published in that but they are lost. It certainly seems to me that a society like the Tri-State Association of the two Carolinas and Virginia ought to pay enough dues to have the money in the treasury to publish their transactions. You pay more than the amount of the dues for any other medical book. I have all the transactions of the Tri-State, that have been published, on my shelves, and I value them very much, and not only because they contain valuable papers, but there is something in these transactions that appeals to me and it is the personality of the men I have known and the friends I have in the society. Money can't pay for that sort of thing. I have been in the society twenty-three years and as I come here there is a tinge of sadness because I miss familiar faces and the cordial hand-grasp of friends who have gone before. I hope they will publish the transactions and publish them always. I am one of the few people that have the complete transactions of the State Medical Society of Virginia from its foundation up to today.

So, I hope, gentlemen ,that the transactions of this body will always be published.

By Dr. R. E. Hughes, Laurens, S. C.—I don't want to take issue with Dr. Upshur ever about anything but the dues have been increased from $3.00 to $5.00 and really at that it is impossible to pay the current expenses, the stenographers, the programmes and get the volumes out because now I think that Dr. Hall will find those columes will cost —of course, depending on the size and the number of pages—but approximately $4 or $5. Now, it leaves no margin in $5 for the other expenses aside from the volume. That volume which is '17 and '18 is very small, due to the fact of the limited attendance during the war, and to make the program which you have today it will make an enormous volume and that volume is going to cost $6 to $7. While I like the sentiment Dr. Upshur expresses, I too would like to have the volume each year, but it is getting to be a practical issue and I don't see how it can be done without a further increase in the dues. It is impractical and looking at it in a practical way that is the way I feel about it and I do not see how we can publish the transactions. So far

as that is concerned, my observation has been that the bulk of men do not care for them. Unfortunately, they cannot be gotten out until five or six or seven months after the meeting and they don't read them very much. And it occurred to me that possibly a great number had rather see their papers in the current medical papers .

By Dr. Southgate Leigh—The sentimental purpose of Dr. Upshur, which I share heartily, could be easily overcome by making an arrangement with the publishers to furnish us with a binder and the journal could be bound every six months or every twelve months by those men who want to keep them. Nearly all the societies in this country now, gentlemen, are giving up their bound transactions and I can think of only one at this time that is published. The Virginia Society has gievn up its bound transactions and a good many others I know of have given them up and have the official journal which keeps you more up-to-date and saves an enormous amount of money. We ought to cut these dues down to $3.00 and there is a good chance of cutting the dues to $3.00 if we arrange for a journal to publish the transactions.

I am heartily in favor of leaving this matter to the executive council to do what they think is for the best interest of the society.

I, therefore, move that this matter be left to the executive council.

I offer the amendment to the motion that the motion include the other officers of the society.

Motion as amended seconded, put and carried.

By Dr. J. A. White, Richmond Va.—The resolution I wish to offer is this:

Resolved: That the number of papers for each meeting be limited to forty; that no paper appears on the program, the title of which is not in the hands of the secretary at least one month prior to the date of meeting; and that no one be allowed to present a paper for three years after his name has appeared on the programme and he has failed to be present and read the paper, without an excuse satisfactory to the secretary.

By. Dr. Crowell, Charlotte, N. C.—I move the adoption of Dr. White's resolution.

By Dr. Leigh—I move that this matter be referred to the executive council to be reported back.

By the President—That is unnecessary. All motions of this kind before the association shall be referred to the executive council without debate. I rule that is in accordance with the by-laws.

By Dr. White—Is this a change of our by-laws or constitution?

By the President—No, sir, it is a resolution.

By Dr. White—Well, I want to have this body adopt this resolution now; it will be some time before the executive council can act upon it and will delay the matter twelve months and next year we will still have one hundred papers to be read.

By Dr. Leigh—I move that the council be requested to report back today.

By Dr. James K. Hall, Secretary—I would like to get permission to inquire of our distinguished former president the authority in the association who shall hold the number of papers down to forty and the authority which shall select this title and discard the other title. The resolution gives no information as to that.

By Dr. J. P. Monroe, the President—We will take that up with the executive council.

The motion to leave the matter to the executive council was seconded, put and carried.

By Dr. J. Howell Way, Waynesville, N. C.—Last night at the conclusion of the program at the church I offered a resolution relative to a request from this association to the senators and congressmen from these three states, the two Carolinas and Virginia, that they initiate and secure, if possible, such legislation as will place the medical officers who served in any branch of the government service, army, navy or marine, during the late war on the same status, if diseased or disabled as the result of such service, as retired officers of the regular establishment.

I would like to ask if that resolution was referred to the executive council, or does it require such reference.

By the President—The executive council will take that up and I will ask them to report this afternoon.

By Dr. J. A. Hodges — I don't wish to delay this meeting a moment, but is does seem to me that some of the resolutions that have been offered—notably Dr. Leigh's and Dr. White's—are both very suggestive in their reference to the future of this association. And I have risen simply for this purpose. It is to be hoped that out of these resolutions there may come some such plan, for instance, as has been adopted in the American College of Surgeons, when this association shall spend its two days profitably in discussing only two or three or four subjects. The resolutions that have been made are very unusual resolutions because in effect, in fact, it limits the free agency of the individuals and it does not take into account sickness or unavoidable happenings or anything of that sort. So, all of these things must be worked out carefully to do justice to the members that are here. Dr. White, like myself, reads a paper every time he gets a chance and others like to whether they teach much or not. Still there are other men here that read papers occasionally and yet would it be better to turn down some of those men and give the preference to others who have had greater opportunities? So all of those questions should be studied carefully before they are passed on.

I have risen for this purpose and I make the resolution to this effect that it also be referred to the executive council—this proposition in general terms because I cannot state it specifically now —that, if possible, some arrangement be made whereby this society of the three states shall sometime get together in the promotion of some one or more scientific studies that are for the good of this Southern section, certainly if this be feasible.

The motion was seconded, put and carried.

By Dr. J. P. Munroe, President— As a member of the executive council, I wish to say that four regular members of that council are not present at this meeting and I am going to take the liberty of asking that all of the ex-presidents who are present meet with the council this afternoon to take up these questions. We want their advice and the benefit of their judgment about these matters and immediately after the lunch hour the executive council will meet in this room and immediately following that, there will be a general session.

By Dr. R. E. Hughes, Laurens, S. C.— I suppose it is in order now. I want to propose the names of Dr. Southgate Leigh and Dr. R. C. Bryan and Dr. J. P. Munroe as honorary members of this association. I will ask Dr. Hall to put the resolution.

By Dr. Crowell, Charlotte, N. C.— Let me ask why these men should be elected honorary members. They are all personal friends of mine, but I would like to know what they have done especially to pick them out instead of taking Dr. White and Dr. Way, of Waynesville.

By Dr. Hughes—All ex-presidents are honorary members.

Dr. Crowell — then I second Dr. Hughes' motion.

Dr. James K. Hall put the question. Carried.

By Dr. James K. Hall—Fellow members, I move you, sir, that we extend, first, our very heartfelt sympathy to Dr. Baxter Haynes, the chairman of the local committee of arrangements who is confined to his bed by illness. As secretary of this association, Dr. Haynes rendered me hearty and helpful co-operation, but he was unable, on account of illness, to meet with us. I move you, sir, that we extend our sympathy to him.

Motion seconded, put and carried.

By Dr. James K. Hall—I move you further that we extend to the local medical society, to the citizens of Spartanburg, to the newspaper fraternity of this town our very hearty thanks for their hospitality and for their cordial co-operation and help during this meeting.

Motion seconded, put and carried.

(Continued in June issue)

THE PSYCHOPATHOLOGY AND TREATMENT OF MORPHINISM.*

By William Ray Griffin, M.D., Asheville, N. C.

In considering the psychopathology and treatment of morphinism, we want to know first just what particular type or class of people, if any, are addicted to the use of morphine. In my experience and in literature I have found that the use of this drug is not limited to any particular class or to a few classes, but that the following professions are in the majority of its users: physicians, druggists, dentists, nurses, medical students and all those who come in contact with the drug and know of its effects as a pain killer and as a producer of a feeling of well-being. A majority of those in the classes mentioned above are neurotics. I mean by this that they are those who are quick to change their minds, who go from one physician to another, are very critical of the physician who will not supply them with the drug and very friendly to the one who does. A large number are psychopaths, mental degenerates and congenital weaklings, who are less able to stand pain and resist temptation of any kind than is the normal human being. Many of those who are morphine addicts are of that class who because of circumstances, such as a neurotic temperment or other predisposition, as before mentioned, have or think they have an immense amount of trouble, and to relieve this or get away from this trouble, they resort to the use of drugs or alcohol, usually the one they can obtain easiest. They fail to appreciate or are ignorant of the effects of this drug.

When asking patients why they have taken morphine, they can give the most plausible excuses. Most of them attribute its use, and often rightly so, to the indiscretion of their family physician in giving it to them for minor ailments. Unfortunately many physicians do prescribe and give morphine too generously to their patients. Some authorities claim that 75 per cent of morphine addicts are addicts because of the laxity of physicians in prescribing the drug.

Those who are absolutely normal, who have no neurotic tendency or predisposition of any kind to become addicts, are those who suffer so much at times from certain diseases that the use of morphine is necessary for perhaps a considerable length of time and they find themselves unable to get along without its use when the pain from the other trouble has entirely disappeared. These cases, however, are rather rare. Some claim that no normal person ever becomes an addict but I am convinced they are wrong in this.

Another thing that plays a great part in the making of morphine habitues is environment. The old saying that "When in Rome do as Rome does" is unnecessary advice for people wherever they live, for when they are in Rome they will live as Rome does if they stay there for any length of time. The large majority of addicts live in communities where there are a number of them and they run together and aid each other in any way possible to obtain it, because they have a most remarkable sympathy for each other.

The Effects of Chronic Morphinism.

In this paper I propose to deal only with chronic morphinism. I shall not have time here to speak of any of the effects of acute morphine intoxication.

In the prolonged use of morphine, the effects of the acute intoxication disappear and the patient obtains only the quieting effects which aid him in the endurance of the stress and strain of his daily life. The effects of the drug diminish, consequently the doses must necessarily be increased, and they may reach thirty to fifty grains. The symptoms of patients vary greatly, depending upon the individual constitution and the power of resistance. Some can get along using the drug throughout life without any marked bad effects, while others succumb in a very short time. In the latter they are soon completely incapacitated for work and are constantly in a condition of exhilaration, stupidity, or nervous irritability, all of which are incompatible with physical or mental work. The emotions of these patients vary a great deal. They are at first as a rule in a slightly exalted euphoric mood with stimulation of intellectual powers but their activity is inhibited. Intellectual capacity may be retained permanently at a considerable height, but they are lacking in the power of decision and the emotional life

*Read before the Spartanburg meeting of the Tri-State Medical Society, February 16, 1921.

suffers as well. The important interests of life are often lost because of the selfish dependence upon the drug. Most of them have pronounced ethical defects, and become more or less morally irresponsible. Truthfulness suffers a great deal, in fact, some of them are the most colossal liars with whom I have ever come in contact. This is usually relative to morphine, concerning which no patient can be trusted. They even commit offences against the penal law, such as theft, falsification of prescriptions, and there is prostitution among women. Their personal responsibility entirely disappears. Home and business both suffers much. They fall into a state of apathy or indolence with loss of practically all will power and energy. They are very careless about their personal appearance and most of them sink into a condition of almost absolute moral depravity.

The Treatment of Morphinism.

Morphinists often try of their own voltion to rid themselves of this terrible habit but this they can rarely ever do because they are unable to use the drug and at the same time decrease the dose which they propose to do. When they begin to suffer they feel that if they can once more get comfortable they will have control of themselves and can endure whatever suffering may follow. They relieve themselves and continue to do so each time the suffering returns.

In the treatment of morphinism there are many methods. Most men have their favorite method to which they adhere more or less constantly. One of the great obstacles to overcome in the treatment of all cases is absolute control of the patient. Patients as a rule fear the treatment of morphinism greatly. They know or have heard of the extremely excruciating physical and mental pain through which they have to go, and they hesitate to place themselves in the hands of a physician for treatment and under his absolute control because of the reason just mentioned, and this is one of the most essential factors in the treatment of morphinism. Few patients can be successfully treated unless they be under the strictest supervision at all times. The addicts have the greatest desire to rid themselves of the habit but they are utterly unable to control themselves while undergoing treatment if they have their liberty. Oftentimes when they know they are going to place themselves in an institution under strict surveillance they scheme to bring morphine into the institution with them in what would seem the most impossible ways. A patient was admitted to Appalachian Hall and after being greatly reduced, he apparently was suffering very little discomfort and consequently was suspected of getting morphine from some other source. After a most careful search it was found that he had it mixed in a jar of cold cream and was rubbing it into his skin. So in the beginning it is well always to search the patient thoroughly and to see that he takes no baggage into his room until it too has been searched. It is necessary that these patients have a special nurse if possible. If this is not convenient they should be kept under lock and key when not in the presence of a nurse or attendant, and no one should be allowed to visit them. A complete history should always be obtained to give the physician an insight into the patient's general make-up. This should be obtained from relatives or friends as well as from the patient himself, as addicts are so prone to misrepresent facts as to the amount they are taking, the length of time they have taken the drug, etc. They should have a thorough physical and clinical examination in order to know just what their physical condition is and to aid the physician to direct his treatment properly.

The first of the different methods of treatment we shall consider is that of Lambert. McIver and Price of Philadelphia made a special study of one hundred and forty-seven cases in order to determine the merits of this particular method. Their conclusion was:

1. The original Lambert treatment was more satisfactory than the ordinary gradual withdrawal.

2. The Lambert method without the free purgation (using ordinary purgation) was very unsatisfactory, patients suffering intensely and showing a marked tendency to delirium.

3. The Belladonna R was the least important element in the Lambert treatment, having little or no greater value than other sedatives, besides having a tendency in certain cases to produce delirium.

4. Having a fixed dosage for each patient, as in Lambert's treatment, is an

undesirable feature, which does not allow for individual differences; to disturb a patient every hour of the day and night is folly; and to try to blend him to a machine treatment is a very unwise procedure.

5. The best method proved to be gradual withdrawal with free purgation as in the Lambert treatment and sedatives or stimulants as required in the individual case. Patients using daily very large doses of drugs and over long periods of time can only have the drug withdrawn very gradually without intense suffering or danger of collapse.

In these conclusions I readily concur. I am frank to say, however, that I have never used this method of treatment because I am inclined to believe it a rather strenuous one, at least more so than the one I use, which I shall outline later on.

Another method of treatment used and strongly advocated by Bluemel of Denver is that by the intravenous injection of normal saline. This treatment he claims acts as a sedative to the nerves, as an eliminant and a diluent of the toxins. I have given this to two different patients though I did not follow the treatment as outlined. The results were not satisfactory to me. The patients were both given this after they had waited the usual length of time between doses and were suffering considerably. The injections of 1,000 c.c. of salt solution in one case gave no relief whatever, in the other there was some slight benefit from the injection. I am not sufficiently acquainted with this method to express a definite opinion as to its merits, but I am inclined to think it would be of some benefit if carried out as Bluemel directs.

The method of gradual withdrawal is one that is most commonly used by a large majority of all men doing this kind of work. In this method all the precautions mentioned above should be carried out fully. Always in the case of gradual withdrawal the patient should be kept comfortable for the first twenty-four or forty-eight hours in order to get his confidence and also to ascertain the amount of the drug he is taking. Most patients fear they are going to be deceived and the drug withdrawn from them so rapidly that they will have to suffer intensely. There are those who advocate a sudden withdrawal after the first twenty-four or forty-eight hours or even from the beginning but under no circumstances would I treat a patient so cruelly as this. The abstinence symptoms are so severe that the patient loses entire control of himself and will do anything imaginable for relief. He may become delirious with hallucination, is much confused and if not relieved may commit suicide. The physical symptoms, too, are extremely severe. How rapidly the drug should be withdrawn depends on the physical as well as the mental condition of the patient. If the patient is strong physically and his nervous condition fairly stable, he can stand a much more rapid withdrawal of the drug than can one who is weak physically and whose nerves are shattered by long use of the drug or from any other cause. Of this the physician must always be the judge, and he can be guided in his judgment by his examination and daily observation of the patient. From some patients the drug can be withdrawn in from one to two weeks with ease, while with others it takes from two weeks to a month or more. As to the time when the drug should be cut most, morning or afternoon, I prefer to do it in the early part of the day. The patients feel that if they have a good night's rest that they can stand the suffering during the day much better, and in this they are right. Along with the gradual reduction there should be kept up constantly from the beginning free catharsis and daily cabinet baths. Personally, I think that the baths are worth as much as the cartharsis, though both work much better together. As the drug is being withdrawn the patient often suffers from nervous insomnia. This can be relieved to a large degree with baths and by the administration of bromides, trional, veronal or other hypnotics in ordinary doses. From nausea and vomiting which sometimes are persistent gastric lavage and reduction of diet are perhaps the best remedies. For pains in the limbs, aspirin and the salicylates may be of some help. The diet should be nutritious and easily assimilated, consisting principally of milk and eggs. This method is my second choice and the one that I use in all cases where patients are old and decrepit, weak or wherever there are any physical conditions contraindicating the use of Scopolamine.

The form of treatment that I use in all cases where the patient's physical condition is good is the Scopolamine method, which is Pettey's treatment somewhat modified. The patient is put to bed and given free purgation. I usually use from three to four C. C. pills at night followed in the morning with a dose of castor oil if the C. C. pills are not very effective. Each day the patient is sweated freely in an electric or steam cabinet bath. This is continued from three to four days and at the same time a sufficient amount of morphine necessary for the patient's comfort is given. After thorough elimination the patient is given 1/200 of Scopolamine, observed closely for a period of two hours to see if there is an idiocyncrasy, and if there is not he is then given 1/200 of Scopolamine every thirty minutes until under its influence. It usually takes from two to four doses to do this. Some patients respond much more readily to Scopolamine than others. 1/200 to 1/400 of a grain is then administered P. R. N. to keep the patient under its influence. Some patients go to sleep and sleep a greater part of the time, others sleep very little and are more or less restless with delirium and hallucinations especially of sight but they are usually pleasant ones. By administering larger doses of scopolamine most any patient can be kept in a profound sleep but this is not desirable. We always prefer that the smallest amount be given to obtain the desired results. When Scopolamine is administered properly to these patients they are absolutely free from pain, though they may be in a semi-conscious condition, and at times when allowed to come out from under the influence of the drug they may complain of very little pain. The length of time a patient should remain under the influence of Scopolamine varies from two to six days as a rule. I have had some patients to whom I gave Scopolamine for only two days. These took a very small quantity of the Scopolamine and slept most all of the time, were absolutely quiet and suffered practically none after getting out from under its influence.

The Scopolamine has been criticised and justly so because some use it indiscriminately. It should never be given until the patient has had thorough elimination by purgation and baths for at least three or four days. It should not be given in cases that have an albuminuria, in the aged and decrepit, in cases who have previously had attacks of insanity either mild or severe, or to persons who are very weak.

Physiological Effects of Scopolamine.

The physiological effects of Scopolamine are somewhat like atropine, it allays pain, dilates the pupil, checks secretion. The period of cerebral stimulation is short and is followed by prolonged mild depression of the psychic and motor centers. It has a peculiar amnesic action in excitable states as in delirium or mania. It seems to have great power to lessen restlessness or excessive motor activity. Its use is not without danger, for it sometimes shows early depression of the respiratory and vasoconstrictor centers and in some cases has caused collapse. I have never experienced any of the above mentioned dangers, and I do not believe if the patient is properly prepared and tested out for idiosyncrasies, and the drug is then administered as it should be, any bad results will materialize. Some of the after effects of this treatment are diplopia. The patient is more or less weak, the amount of weakness depending to a certain extent on the quantity of nourishment the patient has taken while under the influence of Scopolamine. After the treatment is finished the patient usually has a keen appetite and regains his strength and flesh very rapidly. In fact, most cases put on more than their normal amount of flesh.

In all cases after any method of treatment when the patient is well off the drug and all withdrawal symptoms have disappeared, he may be given a more liberal diet but this increase should be made gradually and tonics given. When the patient is able to be up and about, systematic exercises should be instituted and he should lead a quiet, well regulated life. As to how long these patients should be detained a great deal will depend upon the individual case but certainly not less than three months for the mildest type to obtain the best results, some should be kept a year or more. It is very difficult to get patients to remain in an institution for even three months, and this in a great measure accounts for the many relapses of morphine addicts. When they are once free of the drug and have gotten in

fairly good shape physically they have the greatest confidence in themselves and their ability to abstain from its use.

When a patient leaves a sanatorium he should seek new environment and engage in active work suitable to his ability and keep in mind at all times the great price he has paid for his future welfare and existence. It should be impressed strongly upon his mind what it means to take another dose, it matters not how little it may be. Doing this means nearly always relapse into the former condition.

To Summarize.

Members of all classes and professions are numbered among morphine addicts; those who handle the drug being more numerous, the neurotics being predisposed.

The evil effects of morphinism if kept up continuously means eventually entire loss of will power and self control and terminates in absolute moral depravity.

The forms of treatment most generally used are Lambert, Gradual Withdrawal and Scopolamine. The Lambert is a good but strenuous method; the Gradual Withdrawal method with free purgation is the best method in the treatment of the physically weak, the aged and those who have organic lesions contraindicating the use of Scopolamine.

The Scopolamine method is the most satisfactory of all because: first, the patient suffers less; second, when the treatment is terminated the patient has less desire for the drug than in any of the other methods considered; third, the patient recuperates more rapidly; fourth, the duration of time spent is short and free from danger.

In the after treatment there should be a change of environment, this being such that there would be no temptation to return to the use of the drug. An active outdoor life is to be preferred, and occupation should conform to patient's temperament and ability.

Discussion.

By Dr. Tom Williams, Washington, D. C.

I wish to concur for the most part in what has been said by the last speaker. I wish, however, to point out another factor. I might say that in the U. S. Senate Document, 49, published in 1910, all of these considerations I am going to mention are fully set forth.

A person takes to morphine or some other drug because of a state of uneasiness. That state may be psychological, as has been remarked, but it is just as often physiological due to some disturbance of metabolism, to some pain or irritated nerve or some disorder of endocrine gland or some latent infection. So uneasiness of a patient is sometimes traceable to physiological cause. Thus its psychological expressions may be due and often is due to a physical cause. Not only then shall we fail to restore that person to a state of permanent health merely by a deprivation cure, but we would fail to restore that person also by a psychological reorientation and readjustment, because the basic factor in his case is some physical disturbance. I want, however, to again strongly appeal for the regarding of the morphine person or other addict as a readjustment in whom the getting rid of the immediate addiction is only a very small, though difficult, preliminary step in his treatment. We must go back to the disorder which has caused him to fall into that state, whether it is a manner of living or a physical disturbance or psychological malady, we have to show that patient how to live with whatever difficulty we cannot rid him of and we must do it by a period of treatment which cannot be effected completely in the sanatorium; it must be effected after he leaves the sanatorium by his family physician or a specialist in an environment in which he can live, because we have not cured the man until we have taught him to adapt himself to his environment, not necessarily the environment in which he failed, but in some environment in which he can be useful.

Dr. Griffin, closing the discussion:

I heartily agree with the gentlemen who have just discussed this paper about the use of psychotherapy in the treatment along with the withdrawal of morphine. I think every physician in the treatment of every disease uses psychotherapy whether he knows it or not, or whether he intends to in the sense these gentlemen refer to.

We should go into these cases very thoroughly. We should find out if they have troubles worrying them and help them adjust them, if possible. There are some people who treat morphinism

by psychoanalysis. I had one case where psychoanalysis had been used, and this patient told me he had used morphine the entire time he was under treatment. The physician did not know it until he was told about it. Of course, he was relying upon the honesty of the patient, which, as I stated in my paper, we can rarely do. I still think that normal people are liable to become addicts. A normal person is just as susceptible to the effects of morphine as one who is abnormal. The physical make ups are no different, and if it is given to them to relieve pain—as it nearly always is—they cannot help the desire or the craving they have for it and they become addicts the same as anybody else. It matters not what his mental make up may be, in all cases, as Dr. Williams said, we should make a thorough study psychologically, physically and clinically of our patient and help him in every way possible and we should not stop until we have followed that patient through as far as we can. As I stated in my paper, it is the hardest thing in the world, in the treatment of morphine addicts to get them to stay with you, or come to see you every day. Just as it is in nervous conditions, when they get to feeling better they think they are well when they are not. A very small percentage of morphine addicts are very permanently cured and they are not cured because they will not stay with you long enough for you to give them all the help you can.

I thank you, gentlemen, for your generous discussion.

TREATMENT OF THE EPILEPTIC INSANE.*

Victor R. Small, M. D.
Assistant Physician, Dix Hill, State Hospital, Raleigh, N. C.
Late Captain M. C., U. S. Army.

In the consideration of the epilepsies, unfortunately, we have ever been handicapped in that we have been able to discover no definite etiology and could not make a pathological classification of these syndromes. In a certain number of cases we have been able to discover some pathological cause and speak of these epilepsies as being symptomatic. In the vast majority of cases no definite pathological cause can be found and we term these epilepsies "idiopathic," which is another way of saying that they are also symptomatic, but of what they are symptoms, that we do not know.

A scientific treatment of any bodily disorder is based on etiology or pathology or both. Any other treatment is either purely symptomatic or empirical and, necessarily, such has the treatment of the idiopathic epilepsies ever been. Such it is today, for so far, the painstaking efforts of the pathologist and the clinician have revealed to us no definite etiology. Many theories have been advanced, only to fall by the wayside and leave the problem, still unsolved, before us. Yet the efforts of those inclined toward research are to be commended for, though so far, they have been futile, in the end they will bring results, and this every medical man hopes to see in his own day and time.

In the minds of the laity, and, I fear quite often in the mind of the man of medicine, there does not exist the proper concept of the epileptic state. Too prone are many to think of the epileptic as a person subject to convulsions, or paroxysms of convulsions, but of a normal, or nearly normal, mentality during the inter-paroxysmal stage.

All are more or less acquainted with the character of the convulsions and few people indeed have not, at one time or another, seen some one fall in a fit. Probably they were first attracted by the initial cry as the patient fell, and then they noticed the tonic contraction of the muscles, which was shortly followed by a clonic convulsion, frothing at the mouth, chewing of the tongue cyanosis of the face and probably involuntary urination. Then there followed the deep stertorous breathing as the patient lay in a comatose state, most of which objective symptoms are always encountered in seizures of the "grand mal" type.

Then there are the lighter "petit mal" attacks which may be manifested by nothing more than a transient loss of consciousness, though by no means always so light. In fact epileptic attacks are of all degrees of severity from the transient loss of consciousness stated

*Read before Tri-State Medical Association of the Carolinas and Virginia, Spartanburg, S. C., February 16-17, 1921.

above, to the very hard convulsions, and there is no sharp line of demarcation between "petit mal" and "grand mal" attacks, but the essential element of all epileptic attacks is the complete loss of consciousness.

Those who have come in frequent contact with epileptics are acquainted with the stupor or mental disturbances, such as confusion or wild excitement that may precede, but most often follow the attacks. These disturbances are often a source of far greater anxiety and trouble to the patient, and to those who have him in charge, than the attacks themselves.

The manifestations of these paroxysms stand so in the foreground that the inter-paroxysmal stage is often overshadowed. In fact, there are a number of physicians, who, not coming in daily contact with these patients, do not fully appreciate the true epileptic character. This, in a vast majority of cases, is, and in one hundred per cent of cases, becomes extremely unstable. Between seizures the epileptic is, first of all, hypochondriacal, demands attention and craves medicine. Outside an institution this is generally easy for him to obtain and he takes quantities of it. He is apt to be morose and sullen. He is naturally suspicious, this suspiciousness leading to misinterpretations of the acts of others, ideas of reference, and often to well systematized delusions. It naturally follows that he should be extremely irritable, unreasonable and emotionally unstable. There is often some disturbance in the sexual sphere.

It is but natural that one who possesses such an ill-balanced personality and unstable constitution, to which from time to time is added the severe shock of a convulsion, would be subject, soon or late, to a mental deterioration, and, in one hundred per cent of cases, this is exactly what takes place. This deterioration may be almost imperceptable or it may be extremely rapid. There is no set rule as to the rate of development or as to the degree of dementia that will be reached. Always it is progressive, and ground once definitely lost is never regained.

The question naturally arises as to what per cent of epileptics are to be considered insane. If we consider insanity simply as a mental condition that renders the patient socially incombatable, there are undoubtedly epileptics that are not insane, for many of them do get along when they have the care and supervision of friends and relatives. However, this is also true in the milder cases of any of the psychoses. The factors that enable the epileptic to get along are; first, this care and supervision, second, the fact that society in general has not learned to know the epileptic for what he really is. The fact that during the recent war no pains were spared to eliminate epileptics from the army is sufficient proof that the government recognized their unfitness and inability to carry on. When we consider the instability of the epileptic's personality, the incompatability he manifests unless supervised, together with his trend toward dementia, we are led to consider all cases insane, or at least potential cases of insanity.

So let us bear in mind that first of all the epileptic is a mental case, and that at the base of his trouble are to be found mental maladjustments as pronounced as the basic ones found in any of the psychoses. Rather than forget this it were better that we forget that the epileptic has convulsions. In fact, there is a strong probability that the fundamentals of the disorder are to be found in the psyche of the individual, and that his convulsions are manifestations of this psychic disorder, rather than the results of some definite anatomical lesion.

If, for ourselves, we can form a definitely clear concept of this phase of the epileptic state, if we can cease to let the prominence of the convulsions overshadow the mental make-up of the individual, and can get away from the idea that the epileptic would be all right if he were not having fits, we shall then approach the problem from a different angle and realize that our treatment should be the treatment of an individual rather than the treatment of a condition.

Treatment should be, and in a vast majority of cases eventually has to be, institutional. Soon or late the friends and relatives find that they cannot manage the patient at home, and the earlier they learn this the better for both themselves and the patient. Under existing conditions, when it becomes necessary to place the patient in an institution, it is not so much a question as to where the patient should be placed,

as it is a question of where he can be accepted. Many of the private institutions do not care to accept epileptics and, in a majority of cases, the relatives could not meet the financial obligations if these institutions would willingly accept them. As a result the burden falls upon the state institutions and facilities here are in most cases inadequate. It is not a good policy to care for epileptics in the same wards with patients suffering from other psychoses, largely because of the demoralizing effects the epileptics have on the other patients, and also the irritability of the epileptic does not permit the existence of an harmonious mutality with any but his own kind, and often not with these. However, he does get along better when associated with other epileptics than when associated with the insane patients commonly found in the state hospital wards.

Recognizing this fact, many states, probably the best examples of which are New Jersey and Ohio, have provided separate institutions for these cases, and it is best that there should be an entirely separate institution for them.

If any state institution should be built with a view to its being made home-like and a view toward the provision of physical and mental comfort for the inmates, it is the institution for the epileptics. No pains should be spared to make grounds and buildings as beautiful and comfortable as possible, for, when the patient once enters, the chances are the institution will be his permanent home. The cottage plan of construction that will provide for proper grouping of patients is the most desirable, and if provision can be made for a sufficient number of competent attendants and nurses, closed cottages, strong rooms and mechanical restraint are all unnecessary.

Within the institution the daily life of the patient should be one of systematic routine, yet, at specified times, there should be distractions and amusements in the form of dances, musical entertainments, ball games, etc., and all patients, able to do so, should be given every encouragement to take part. Occupational therapy, in the author's opinion, is the most important therapeutic measure and, in every case possible, the patient should be given for a certain number of hours each day, some useful employment. It is well to teach the patient to become proficient along some line of work in which he becomes interested and then to let him realize in a financial way a part of the proceeds of his labor. The diet should be simple, plain, yet nutritive and well balanced, care being taken to guard against an ill-balanced diet, especially one too high in protein. Except for the vigorous, muscular patients who do hard physical labor, two meals per day are sufficient. Strict supervision, preferably by both physicians and attendants, is necessary while patents are eating in order to guard against patients bolting their food and also to render needed assistance in case a patient has a convulsion while eating. Regular hours for retiring and for rising should be observed and, when in bed, every effort should be set forth to see that the patient gets the proper amount of sleep. Free elimination should be kept up, in short all the common-sense laws of hygiene should be observed.

After the patient has entered the institution and his case has been sufficiently studied and observed, it is well to make both the patient and his relatives to understand something of the nature of the affliction. It is not well to hold forth to either any false hopes for complete recovery nor to practice any deception whatever. Firmly yet sympathetically the patient should be told. It is not necessary to snatter all hope yet the patient should be told the truth. Frequent visits from relatives, or frequent visits of the patient to his home, should not be tolerated but infrequent visits should be encouraged unless the home environment is such as to make this undesirable. Co-operation should be asked of both patient and his relatives to make the institution the most enjoyable, most desirable, and best possible place for him and, when we are perfectly frank with them in regard to these matters, it is surprising how whole-heartedly both will respond.

In regard the medicinal treatment for the convulsions, this paper will be limited to a brief discussion of the efficiency, or lack of efficiency, of but three drugs; viz., bromides, paraldehyde and luminal.

In regard to the first, the opinion here expressed shall be one of condemnation rather than of praise. The laity in general, as well as the medical practitioners, know something of the seda-

tive principles of the bromides and I fear that there are a number of physicians whose first thought, when they encounter any condition wherein psycomotor hyperactivity is in evidence, is to give bromides. Often this is the only thought they have but if they do have a second thought, it is to give more bromides. There is no condition in which psycho-motor hyper-activity is more in evidence than in the epilepsies and as a natural result, when the epileptic is first seen by a doctor, he is given bromides. The treatment fails to cure the condition and in a course of time the patient consults another doctor and is given more bromides. May be the third or fourth physician consulted will add a little chloral hydrate to the dose, but the chances are that his medicine also contains the same baneful drug. Then eventually the patient, despairing of doctors, forsakes them temporarily and turns to patent medicines, and here he gets more bromides than ever before.

What is the result? Simply this: the patient's convulsions may here be arrested for a time but soon return with as great severity as before. As he becomes saturated with the drug his digestion is sadly disturbed; he loses his appetite and is constipated; the excretory organs do not properly functionate; the skin is covered with a bromide rash; there is a general lowering of vitality and bodily vigor; all mental processes become sluggish; memory is poor; he becomes dull, stupid and indifferent, and he is being hurried downward on his road to dementia. Sad it is but true, that the vast majority of epileptics received into the institutions are in the condition pictured above.

It is surprising to note the improvement that spontaneously takes place, simply from taking the patient off the drug. Contrary to popular belief, the convulsions do not increase in number or severity. Digestion improves; the skin clears; the organism begins to functionate properly; bodily vigor increases and the patient becomes mentally much brighter. All the above are hastened if the patient is for a time given daily or twice daily, small doses of strychnine. Again, contrary to popular belief, strychnine will not increase the convulsions if guardedly given, but aids in readjusting the organism.

The author of this paper does not mean to convey the idea that the bromides have no place in the epilepsies, for if judiciously, intelligently, guardedly administered, they are of some value in certain of the cases that are very nervous and hyperactive between attacks. Even here the advisability of giving them over a long period of time is doubtful, and at any time, the saturation of the patient with this drug is all wrong. We have given small doses of bromides in conjunction with luminal in a limited number of cases, but could not see wherein they increased the efficacy of this drug and this practice was discontinued. During the past six months we have not given a grain of the bromides to any one of the patients at the North Carolina State Epileptic Colony and feel that to this was largely due the general improvement noted in the condition of each patient that had formerly been taking bromides. From the author's experience in two institutions devoted to the care and treatment of epileptics alone, he is led to the opinion that in the symptomatic treatment of the epilepsies, bromides have been more of a curse than a benefit.

For the treatment of the convulsions "per se," paraldehyde is a drug of the first rank. It is not a drug to be administered over a long period of time but only on occasions when the patient has several convulsions or when there is a threatened or actual "status epilepticus." When properly given I have never seen a failure of paraldehyde to control these conditions. When a series of seizures threatens, the convulsions can often be stopped by giving two drams of the drug, well diluted, by mouth, repeating in three hours if necessary. When "status" threatens, it is always better, if not absolutely essential in order to get results, to give from three to six drams of the drug per rectum. Such administration should take place after the expulsion of a copious enema that had been given high. When so given it is surprising how soon thereafter results are obtained, and it is seldom necessary to repeat the administration. In institutions caring for epileptics, nurses and attendants should be taught the proper method of rectal administration of this drug.

As regards the therapeutic value of luminal, the author wishes to add a word to the boost given this drug by De Moor,* Grinker,** and others. At

the North Carolina State Colony for Epileptics we tried this drug in what we considered to be thirty representative cases. In none of these cases was there a history or any evidence of former traumatism to the head, syphilis, or of anything that could be considered as a definite etiological factor.

The patients were given one and one-half grains of the drug at bedtime and the subsequent observations were most interesting. A comparison of the conditions of these patients during a period of three months preceding the administration of this drug, and the first three months during which they were taking it, is as follows: Of the thirty cases, but one showed no decrease either in the number or the severity of the convulsions. One case showed a decrease of 10 per cent in the number of convulsions. Seven cases showed a decrease of from 25 per cent to 50 per cent. Eight cases showed a decrease of from 50 per cent to 75 per cent. Five cases showed a decrease of from 75 per cent to 90 per cent. Nine cases, that is, practically one-third of the number, showed an absolute cessation of convulsions. During the three months prior to giving luminal the largest number of attacks that any one of these nine patients had had was seventy-two, the least, four; the average, twenty-one. That is, these were nine cases, that had been averaging seven convulsions per month prior to giving luminal and all were entirely freed from convulsions during the first three months of luminal administration. Of these nine cases, two have since been discharged from the institution and as often happens, have been lost to observation, while the remaining seven are still in the institution and are still free from convulsions. In all cases in which the convulsions were reduced in number but in which they did not entirely cease, there was also noted a change in their character, the "grand mal" attacks being proportionately reduced relative to the number of attacks of the "petit mal" type. In all cases there was a decided improvement in the mentality of the patient. They became more cheerful, mentally brighter, less irritable and seemed to literally "take a new lease on life."

In all these cases the urine was frequently examined and in no case did we find that the drug produced an albuminuria or any other evidence of untoward effects.

In the author's opinion, luminal should not be looked upon as a cure for "idiopathic" epilepsy, but if continued observation will show that it will lessen the number and severity of the convulsions and retard the progressive mental deterioration of the patient, it will be a "God-send" for which we should be truly thankful.

Summary.

1. The convulsions encountered in the epilepsies should not be permitted to overshadow the mental make-up of the individual. The mental disorders noted during the inter-paroxysmal stages are the most important factors in the epileptic state.

2. Treatment should be primarily the treatment of the individual as a mental case.

3. Treatment should be in an institution and the institution should be adapted primarily for the treatment of these cases.

4. The treatment for the convulsions themselves is purely symptomatic. Paraldehyde and luminal are both of great value. The value of the bromides has been much over-rated.

*De Moor, Dr. L. Bul. de la Centr. Klin de Gand, August, 1913.

**Grinker, Dr. Julius: Experience with Luminal in Epilepsy, Jour. Amer. Med. Ass'n., 75: 588, August 28, 1920.

DISCUSSIONS

By Dr. Tom Williams, Washington, D. C.

I should deplore the general acceptation of the belief that the epileptic attack is an attempt for satisfaction of a repressed phychological desire. The acceptance of that concept would lead to time-consuming, expensive and futile psychoanalysis. I think we are putting the cart before the horse when we attribute the physical to psychological disaffection. The mental makeup of the epileptic patient, I believe, is due to the fact, firstly, that a condition, a physical one, is present, of this one manifestation is the convulsion. Whatever that condition may be, it certainly can be a toxic one. We know it is so when absinthe injected intravenously produces epileptic convulsions. We know that the toxic states found in uremia and the puerperium will produce epileptic convulsions.

Quite apart from the psychological state of the individual, certainly we know that the convulsion itself in many patients produces an intense state of physical depression accompanied naturally by psychological depression and uneasiness, the kind of feeling which makes one want to gnash one's teeth so distressed one becomes.

The second factor accountable for the mental makeup of the epileptic is the anti-social attitude which they are compelled to have by the way in which they are regarded by the laity. There is no place in life for the man who has convulsions unless he falls in with a highly sympathetic set of people who will deal with his convulsions lightly and look upon him as a person that can work, and his convulsions merely as an unfortunate accident to which they will pay as little attention as possible.

I have such cases working in Washington and in Virginia now, whose surroundings are favorable in the sense that their fellow workers have learned to regard the attacks just as they are regarded in institutions, where they are not regarded at all. If the patient has an attack, he is left alone on the floor until he comes to where he can continue his work or go home, as the case may be. So the anti-social attitude of people is responsible for many of the mental reactions of the poor epileptic and these are the consequences of the epileptic state rather than its causes. There are a great many causes, of course.

THE EFFECT OF NATIONAL PROHIBITION ON THE INEBRIATES OF OUR COUNTRY.*

By W. C. Ashworth, M.D.,
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The deterrent effect of national prohibition on the formation and prevention of inebriates is both disappointing and surprising to most of us, as evidenced by the report of Bird S. Coler, Commissioner of Public Welfare, New York City.

"Alcoholism in New York City during the four months from August 1 to December 1, 1920, increased nearly 100 per cent as compared with the record of the corresponding four months 1919. It is interesting and rather illuminating to know that the number of alcoholic cases for the 1920 period nearly doubles that of 1919 period, notwithstanding the high prices, the prohibited sale, and the supposed difficulty in obtaining the liquor illicitly."

Mr. Coler further states: "More alcoholics now come to us as a result of drinking the so-called 'Blind Tiger Liquor,' extracts of every description, patent medicine of strong alcoholic content, while during the 1919 period there were many beer drinkers owing to the permissive open selling of the beverage. During the latter part of the summer the patients began to manifest a slow evidence of a severe poisoning, as though the liquors they had been drinking were not as good a quality as that to which the population had been accustomed. In fact, it seemed as though the patients had been poisoned by some by-products of alcohol. It is the opinion of the Commissioner of Public Safety that any and everything is now clandestinely sold as a substitute for liquor, and the consumers are as tolerant of the quality as the price. From July 1 to December 1, 1919, there were seven deaths in Bellevue Hospital, Alcoholic Ward, while during the same period in 1920 there were eleven deaths in the same ward."

The above report of Mr. Coler is offered as a prelude, or rather as an excuse for the subject of my paper.

The craving for stimulants in one or another of their innumerable forms is not local, unusual, arbitrary or statutory, but on the other hand a deep-rooted and almost universal passion of human nature. It is to this deep basis of the propensity of human nature that gives to the subject its mystery and perplexity. The question can naturally be asked, why this widespread use of alcohol? Because it has seemed to supply a want that has been felt by the entire human family from time immemorial for stimulation in some form. The desire exists among civilized and uncivilized nations all over the world. A certain per cent become addicted to opium and its derivatives, some to tobacco, others to alcohol.

The alcoholic controversy has for many years occupied a large share of

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public attention, and from all appearances, it is as far from a settlement today as it was in the begining of the controversy.

Two classes have been instrumental in keeping up the whiskey controversy. The temperance fanatic on one side, and on the other—those interested in the manufacture and sale of whiskey, and the thousands of well meaning people who have taken respective sides without being familiar with the real issues involved.

The temperance people claim that alcohol in any form is always injurious, and that it should not be used on any pretext, while the manufacturer and vender claim that they have the same right to deal in it that they have to deal in any other article of commerce.

The above classes of individuals cannot be expected to change their views and therefore, they will continue to wage a useless warfare against each other, and each crusade will leave the question just where it was at the beginning of the controversy.

The only true solution in my judgment of this temperance question will be scientific and not an emotional one. When scientific men turn their attention to the subject, and the people are made to understand the true position of alcohol, some important results may be achieved. When we can put aside fanaticism and self interest and enlighten public opinion, laws can then be enacted to regulate the traffic in whiskey which will do injustice to none, and which can be enforced without causing us to blush for the civilization and intelligence of the legislative enactments of the twentieth century.

We all admit that alcohol in large doses is a poisonous agent, and all of us who are best able to judge, I mean the medical profession, with but few exceptions recognize it as a useful medicine under certain conditions, while many more careful observers claim that if it is not a food it has a decided food action. Now before this controversy can be settled, the public mind must be satisfied regarding the medicinal use of whiskey. When this is once done no one will defend its excessive use as a beverage, and no obstacle will stand in the way of proper enforcement of national prohibitive laws.

What then is to be done where logic is so soon at fault? We cannot depend absolutely upon the headlong reformer who fixes his attention upon some phase of evil, and would eradicate it root and branch irrespective of the fact that he himself is involved in some habit not very unlike that which he so zealously condemns. The would-be reformer himself is very often an object of reformatory solicitude.

The man who seeks pleasure from alcoholic stimulants is often denied the things of life that would make the use of alcohol unnecessary, could he but have the opportunity of enjoying them.

I am not defending the use of alcohol as a beverage, but wish it to be understood that so long as our social conditions remain as they are today nothing we can say or do will materially influence the desire for alcoholic stimulants. Our aim should be to investigate the subject with a desire to ascertain the exact truth, to be just and charitable to all, and strive to improve the conditions of mankind in order that the sale of alcohol may be discontinued by wise legislation that will protect alike the rights of the individual, community, state and nation. While most of us admit that the proper use of alcohol is many times of inestimable benefit, but we all admit that the results following its abuse are so terrible that we have reason to consider the advisability of recommending it in many cases, where it might seem to be required. The inordinate use of whisky paralyzes the nerve centers, is an active cause of disease of the kidneys and liver, completely destroys digestion, and invariably leads in the end to chronic alcoholism and premature death.

Of the moral effects of the abuse of alcohol I shall not attempt to write, but only emphasize that its abuse inflicts untold misery upon thousands besides the victims themselves, therefore, it is admitted by all of us that there is urgent need for a solution of the problem. The solution of the problem is of vital importance not only to the present generation, but to generations yet unborn. The successful solution of the whiskey problem cannot be brought about by the sweeping denunciations of the fanatics, or by the most stringent legislation unsupported by public sentiment. A complete revolution cannot be brought about in a day, therefore, neither fanaticism or legislation will evolve this alcoholic controversy out of

the labyrinth of perplexing issues which surround it. In order that we may have this question properly settled, we must not be influenced by public sentiment against alcohol that is based on false deductions and misstatements of facts. We must show what is the true position of alcohol and demand that the rights of the many shall not be infringed upon by legislation for the present benefit of those who are morally weak. We must educate our people through public discussions and scientific experiments, that alcohol is both a medicine and a food. The public must be convinced that temperance fanatics are not competent authorities, and before we accept their statements, we must learn the scientific side of the question. The public must understand that instead of all crime being due to temperance, that in a large per cent of cases, it is the result of our social conditions, and in order to be controlled, we must go to the bottom of our social super-structure to find the cause instead of spending all of our energies in fighting the liquor traffic.

It is necessary for us to strive to improve living conditions of poorer classes in our large cities by providing for them more comfortable homes, by regulation of tenement houses, by just legislation which will secure for them a place for social gatherings and cheap but instructive amusements. I would suggest that every tenement or apartment house should be provided with a reception and play room, preferably on the top, at the expense of the owner of the building. I feel sure that with improved living conditions for the poorer classes that temperance fanatics will have less to "harp on" and humanity will be made purer and better. The reformer who has a comfortable home and drinks the best of wine at his own table does not fully realize what he asks for when he calls for closure of the various resorts, which in the past have been the only source of diversion and recreation for the poorer classes. When we visit the average tenement house of our large cities and note the conditions under which a large proportion of our people live, as for example, five or six families crowded in a single room, with but little light or ventilation, it is but little wonder when the day is finished that cheer and comfort are sought in amusement halls and other places of recreation and many times of doubtful reputation. The women and children have no social life, and the men only that which they can obtain in the saloon or beer garden, which are the only resorts where they can for a short time forget the hardships of bread-winning and high prices. When we thus understand the real conditions of life among the masses of indigent poor we can readily see how impossible it is to pass successful reformatory legislation. We can also understand the great necessity of establishing living conditions that will supply the social stimulant, which alone can banish the excessive use of alcohol. It is evident that these changes cannot be brought about at once, but in my judgment neither moral suasion nor legislation will ever settle this question until social conditions of the masses are so improved that they can find pleasure and enjoyment and a little freedom from the cares and trials of life, without seeking them in the "blind tigers" of today. It is manifestly our duty to commence this reform at once as by so doing we can arouse all the finer and nobler feelings of those for whom we set to work and a marked improvement can be made in the conditions of the indigent poor even of the present generation. We will observe by a gradual evolution that each generation will be better than the preceding one. Higher aims and purer enjoyment will supply the universal desire for pleasurable stimulants.

I realize that I have presented these thoughts very imperfectly but I am convinced that all who think seriously on this important subject will agree with me in the main. No individual or class of individuals can judge the matter from their own narrow standpoint, but all must deal with it in a spirit of candor, justice and charity. When we learn that intemperance represents many times only a dissatisfied yearning for higher and purer social condition, and when we learn to forget pride of place and power, and stretch out our hands in kindness to our less fortunate brothers, and realize that we must reach them by appealing to their social natures, and when we are willing to talk less and do more for the improvement of humanity, this alcoholic controversy and many other vexed questions will settle down to their own true positions, which will be found to correspond with the fixed laws of nature.

Let us remember the verity of the antiquated verse: "There is so much good in the worst of us and so much bad in the best of us that it little behooves any of us to speak evil of the rest of us."

FOOT STRAINS.*

Alonzo Myers, M.D., Charlotte, N. C.

With the ordinary symptoms of flat foot or the local symptoms of foot strain we are more or less familiar, but the remote or objective symptomatology is frequently overlooked. In this paper it is my desire to emphasize some of the important signs of foot strain that are so frequently unobserved or considered unimportant.

From the appearance of a foot we are unable to tell the degree of disability and suffering. In the colored race we often see a complete flat foot anatomically, producing no symptoms; however, a foot with extreme abnormal relation between the foot and the leg or between the bones of the foot, only requires the added element of unusual functional demands, trauma or infection to produce symptoms; and then the symptoms often manifest themselves at a distance from the foot. The muscular working limit has often been reduced to such an extent by improper footgear that the strain of further function is felt in loco or at a distance, without evident cause.

The reaction of the periosteal attachment of the ligaments, under abnormal stress on account of muscular insufficiency, is the cause of foot pains. Mechanical maladjustments at the lower end of the leg, disturbances of the lines of weight-bearing and muscular balance may hinder function in the knee, hip and even the spinal joints. Many individuals with feet muscularly impaired are succeeding in maintaining a correct posture; but this cannot be done without improper distribution of muscle work.

The anatomy of the foot with respect to the purpose of its structure may well be looked to in order to form a conception of the true meaning of some of the abnormal manifestations there to be observed.

Too much stress has been laid on the intrinsic structures of the arches and not enough has been said about their mechanical relationship to the rest of the lower extremity.

An important feature about the mechanism of the foot when regarded as a whole with respect to its functional relationship to the leg, is the fact that its construction is such that a means must be provided to keep it in line with the rest of the lower extremity during weight-bearing. The transmission of the bodyweight to the ground takes place through a line corresponding to the axis of the tibia, passing approximately through the center of the tibio-astragaloid joint. This line passes through the os calcis not at its center, but decidedly mesial or internal to the joint. This may be seen in any anatomic drawing or ligamentous preparation of the foot. As a result the tendency of the foot as a whole is to cant inward, on the leg unless prevented by muscular action as is emphasized in every description of the foot mechanism.

Roberts calls attention to the "Globular contour of the inferior bearing surface of the os calcis." It seems quite right to say that the obvious purpose of this condition of mechanical instability is to provide for elasticity of gait through muscular control.

Pronation and abduction of the foot is chiefly checked by the deltoid or the internal lateral ligament of the ankle joint. The part of this ligament we are most interested in is the tibiocalcaneal band which extends from the internal malleolus to the sustentaculum tali of the os calcis. When movement in pronation is not sufficiently controlled by muscular action, strain will first fall on the tibiocalcaneal ligament and as the process of pronation and abduction continues and as abnormal stresses are continually falling on these ligamentous bands, their periosteal attachments to the sustentaculum are likely to be found tender to pressure.

Freiberg, of Cincinnati, makes it an invariable practice in examining the foot for functional strain to test the sustentaculum for tenderness. He believes that probably all people who have undoubted foot strain are tender at this place whether deformity of the foot be present or not.

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Persons who have no symptoms which may be attributed to impaired power of supination and adduction of the foot practically always have tenderness of the insertion of the tibiocalcaneal ligament into the sustentaculum tali or at its posterior extremity.

Many persons who have no foot symptoms have tenderness on pressure over this point; this is also true of many persons, who have no symptoms attributable to the lower extremities at all.

Most persons with strong symptomless lower extremities are not tender on pressure over the sustentaculum. This tenderness is to be regarded as indicative of potential weakness in adduction and supination. This is true in proportion to the ease in which tenderness is called forth. The functional interdependence of the individual segments of the lower extremity has long been recognized in an indefinite manner as the result of clinical experience. Marked fatigue, pain in the legs, thighs and back without foot symptoms are the symptoms presented by many patients suffering from foot strains. We are able in such cases to dispose of these symptoms by attention to the mal-posture of the feet. Lowman has shown the importance of the external rotators of the thigh in maintaining the proper relations of the leg to the foot. He has set forth the possibility of assisting the restoration of normal muscular balance by gymnastic cultivation of this group of muscles.

In conclusion let me emphasize the importance of recognizing symptoms of foot troubles in the early stage.

INTENSIVE ROENTGEN RAY THERAPY IN INOPERABLE AND BORLINE MALIGNANCY.*

Dr. Fred M. Hodges, Richmond, Va.

For some time the literature has been so flooded with articles on the use of ray radiation in malignant conditions, that it is not deemed necessary to enter an academic discussion of the physics of the ray, or the physiologic or biologic reactions caused by it. It is a fact known to most of us that radium and X-rays possess a certain selective action for all cells approaching the embryonic type and particularly for malignant cells. The malignant cell does not possess the cycle of growth, function, and degeneration occurring in the normal cell. The malignant cell having no period of function, division takes place in the period of growth, and only embryonic cells are formed. The sensibility of the cell to the ray is markedly different in different tissues. Sarcoma cells are about five times as sensitive as the normal tissues, while carcinoma cells are about two to four times as sensitive. This does not apply to squamous cell cancer, fibro sarcoma, chondro sarcoma, and osteo sarcoma. They may be as resistant as the normal tissues.

Malignant cells treated show coagulation necrosis and degeneration, as shown by the absence of mitosis, by karyolysis, cytolysis, and achromatism. There is also a round cell and connective tissue infiltration followed by scar tissue formation. As Dr. W. J. Mayo expressed it, "Radio therapy destroys cells for a certain distance, but cells are sterilized at a greater distance, so that their reproduction is checked, and connective tissue is caused to develop, which acts as a barrier to the further extension of the malignant process." Lymphatic channels treated show a perilymhangitis, followed by connective tissue formation and blockage of the channels.

Before considering the type of case to be included under inoperable and borderline malignancy, it is necessary to consider first what constitutes an operable case. If a growth is so located that it can be entirely removed by surgery, it is operable, and certainly no other method of therapy should be considered, except in skin cancer which is not considered here. This does not mean that this is the only type of growth which should require surgery, but it does mean that it is the only type of case which should require surgery alone and not in combination with other useful methods in combatting the condition.

The borderline group constitutes a very large majority of cases seen by all of us. All cancer with any lymphatic involvement is included. Surgery alone will very frequently not affect a cure, or in some cases an amelioration of the symptoms, except for a short time, while in others there may be a rapid

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dissemination of the growth with an earlier fatal termination than would have otherwise occurred.

Inoperable carcinoma includes all cases not falling in the above groups; that is, metastasis has either already occurred, or all involved lymphatics cannot be removed. In every case of malignancy, especially in cancer of the breast, ovary, stomach, thyroid, and prostate, a careful study of the patient should be made before any form of therapy is instituted. It is not extremely uncommon, a few days following some radical operation, to find in the pleura, mediastinum, or lungs, metastasis which evidently existed prior to treatment.

Since June, 1919, we have treated fifty-one cases of borderline and inoperable malignancy. No patient treated less than four months or which has been lost sight of, has been included. No distinction has been made between recurrent and primary growths. There were forty-three cases of carcinoma and eight of sarcoma.

The carcinoma series consisted of the following:

Carcinoma of breast, 24 cases, 13 borderline, 11 inoperable.

Carcinoma of oesophagus, 3 cases, all inoperable.

Carcinoma of skin on back of hand, 1 case, borderline (?) probably inoperable.

Carcinoma of skin and glands of neck, 1 case, borderline.

Carcinoma of gall bladder and liver, 1 case, inoperable.

Carcinoma of stomach, 2 cases, inoperable.

General abdominal carcinosis, 6 cases, inoperable.

Squamous cell of penis, 1 case, borderline.

Squamous cell in the mouth, 2 cases, inoperable.

Of the eight sarcoma cases there were:

Lympho sarcoma, 4 cases.

Of the mediastinum, 1 case.

Mediastinum, pleura, and lungs, 2 cases.

Glands of the neck, 1 case.

Chondro sarcoma, 2 cases.

Retro peritoneal sarcoma, 2 cases.

In this group of fifty-one cases, nine showed little, if any improvement or benefit from treatment. There were two of breast cancer, both with abdominal metastases; one of gall bladder and liver cancer; two of general abdominal carcinosis; two of squamous cell cancer; one of these involving the alveolar process and inferior maxilla, the other the inner cheek wall; two of chondro sarcoma; one located just in front of the ear and involving the condyle of the inferior maxilla, the second located above and behind the ear.

The two chondro sarcomas received massive doses of X-ray from every possible direction, one also having radium needles applied directly into the tumor, but with absolutely no reduction in the size of the tumor. There has, however, been no lymphatic involvement and section of the removed growths showed cellular degeneration.

The two squamous cell growths within the mouth received the same intensive treatment as the chondro sarcomas, and with no effect. Operations previously performed were of only very temporary, if of any, actual benefit.

The five carcinoma cases showing no result all had extensive abdominal metastases and had received a knockout blow from the disease before treatment was undertaken. None of these patients could stand the full doses which are usually necessary to give even temporary relief where there is so much pathology present. This inability of the patient to withstand heavy doses applies particularly to the abdomen in every patient, but is much more marked in some than in others, while of course a weak and emaciated patient will not withstand as much as one in good clinical condition.

Of the 42 remaining cases, 14 radical operations were done following intensive therapy. Improvement in the lesion had been noted in every instance, and examination of removed specimens showed varying stages of coagulation necrosis throughout. It is imposssible to say as to the exact amount of benefit derived from the X-ray treatment. Two cases with extensive superficial and deep lymphatic involvement and considered inoperable were brought into the borderline group, and have shown no recurrence after 14 months; only one in the entire group showed a recurrence in the line of operation. This disappeared under further treatment. Of course these patients have not been under observation long enough to determine any

lasting benefit, but the results have been encouraging.

The nine remaining inoperable cases have all been unquestionably benefited. Some pain has been relieved in practically every instance. Bleeding, ulcerating, sloughing foul smelling growths, have been destroyed, leaving a smooth, clean area. The swollen oedematous, painful arms, following recurrence around the blood and lymphatic channels were practically always relieved, when the area infiltrated by cancer cells was softened up by the treatment.

Unless these patients are nearing the end of the terminal stage of the disease, they can usually be kept in good general condition, can carry on some or all of their daily duties, and are practically free of subjective symptoms for a long time.

A more or less typical case is as follows:

Woman, age 53; radical amputation left breast, February, 1919; pathological report—adeno carcinoma. Returned June, 1920, with a bleeding, ulcerating growth on the anterior left chest wall, extending from the fourth to the sixth ribs para sternal line to the anterior axillary line. Between the clavicle and third rib, there was another mass which elevated the skin surface about one and one-half inches more than the opposite side. This was very hard and painful. The left arm was swollen and painful. The fluoroscope showed widening of the mediastinum. Fifty milligrams of radium was applied directly into ulcerating growth for twelve hours and patient returned home. After six weeks, she again returned. The ulcerating growth was very much improved, and about one-half the original size, with no bleeding. The growth below the clavicle was larger, the left arm more swollen, and there was a large pleural effusion on the left side. X-ray therapy was considered useless, but the surgeon insisted on trying it. Today both growths have entirely disappeared, the skin being soft, smooth, and movable all over the chest. The left arm is normal in size and not painful. There is about one-third as much fluid in the pleural cavity as there was six months ago, and the patient is symptom free. In all cases where there is a mass, as in this patient, radium should be applied directly into the tumor. The skin is not affected and large doses of X-ray can also be applied.

Two of the three carcinomas of the oesophagus had already had gastrostomies on account of obstruction and were in a very weak, emaciated condition. The substernal pain and spasmodic coughing attacks were relieved. Both died of extensive metastasis, the fluoroscope showing some reduction in the chest pathology. After a few treatments, the saliva passed on into the stomach, preventing the constant and disagreeable expectoration noted in all such cases.

The third case, a woman, 44 years old, consulted a physician in June, 1920, for difficulty in swallowing at times. She was treated for several months for cardiospasm. The first of October, the X-ray examination showed almost a complete obstruction of the oesophagus in the upper portion of the lower third. She had lost nearly 40 pounds, could take only liquids, and in very small quantities, and had a good deal of substernal pain. Now she has gained weight, eats anything, has no pain, and plates show marked improvement in lesion.

Two inoperable carcinomas of the stomach were relieved of subjective symptoms. One, a man, aged 58 years, operated on June, 1920, for almost complete obstruction near pylorus. Stomach was found fixed, and many glands involved. A gastro enterostomy relieved the symptoms for about four weeks, when he again began to have pain, nausea and vomiting. Ten days after the first series of roentgen ray treatments, his symptoms were relieved since which time he has been performing his usual duties. February 3, he stated that he eats anything but pickle, but for some reason this causes a great deal of gas.

The four cases of general abdominal carcinosis were all relieved of pain in some part of the abdomen or pelvis, and their general condition was improved. One, with a recurrence following hysterectomy, is after 18 months doing her house work with comparative comfort. At first, she complained of pain in the left groin and down the left leg.

The four cases of lympho sarcoma showed very spectacular results, as far as the local lesions were concerned. The case with a large mediastinal tumor and glands of the neck seemed to be well for nearly a year, but now has a lesion

of the spine with paralysis. Both patients with extensive involvement of the mediastinum, pleura, and lungs were entirely relieved of chest symptoms and practically so of any demonstrable pathology, but after eleven and fourteen months, died of the disease elsewhere. Both were in good condition until a very short time before death.

The patient with involvement of the glands of the neck returned to Italy eight months after treatment was begun and has not been heard from. At that time, the glands had practically disappeared.

The retro peritoneal sarcomas have been benefited to some extent, but we have not been able to destroy the growth. Here the viscera and abdominal wall must be penetrated before the tumor is reached. With our present technique, we are not able to deliver enough rays to the growth for the desired effect. This may be possible later with the type of machine now being constructed. Instead of one hundred and twenty-five thousand volts now used, we may use around two hundred and fifty thousand, with much heavier filtration and greater distance. This causes a much greater proportion of the rays to be delivered to deeply seated lesions without injury to the skin. Unless there has been general metastasis, radium applied directly into growth probably offers the only hope, except where it can be entirely removed.

Surgeons generally are very enthusiastic over the use of ray radiation before and after operation in many operable malignant conditions. It is here unquestionably that roentgen ray therapy is of most value. Deaver, Knox, Phahler, Ochsner, and others since using this technique in breast cancer, claim a twenty-five per cent or more reduction in mortality. They believe this is largely due to the destruction of cancer cells in the superficial skin lymphatics of the breast, and that many recurrences are really direct extensions of the process through the skin lymphatics.

W. J. Mayo, in a recent article, says:

"By properly combining radio therapy with surgery, we can increase operability, lower mortality, and increase percentage of cures."

A study of the cases here presented seems to justify the following conclusions:

1. Practically all malignancies should receive ray therapy before and after operation.

2. In borderline cases the mortality can be reduced.

3. In inoperable malignancy, the symptoms can usually be relieved, life prolonged, and occasionally a case can be brought back into the borderline or operable group.

TUMORS OF THE LARGE INTESTINE WITH REPORT OF TWO RECENT OPERATIVE CASES.*

By Dr. Robert T. Ferguson, Gaffney, S. C.

I have no apology to offer for presenting a paper on this subject before this association. While I do not claim to bring you a message that contains anything scientific, I do claim that the subject I have chosen is laden with facts that should be amplified and made to produce results in a field that is so pregnant with errors in diagnosis.

I shall not burden you with statistics nor bibliography but give you some plain facts as they have occurred in my work.

In the first place, I want to call your attention to the symptoms that usually present themselves or are presented to you by the patient upon examination. These unfortunately do not always have any direct relation to the part involved. The most prominent symptoms pain, tumor and constipation are often misleading and do not point directly to the diseased area. In a number of cases that have come under my observation the pain has been more generalized in the abdomen than located in any particular quadrant. In others while the pain is definitely located no tumor is discernible, and constipation is a negligible quantity. I might say that constipation in the majority of cases I have seen, especially in females, is rarely taken into account by the patient, for at least 90 per cent of all women suffer from constipation anyway. Pain, then, in the upper quadrants may easily be due to trouble in the gall-bladder, stomach, duodenum, pancreas, spleen, hepatic or splenic flexure of the colon.

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In the lower quadrants you must differentiate between chronic appendicitis, with adhesions, pus tubes or tumors of the ovaries with old pelvic masses and adhesions from various causes. Tumors of the sigmoid unless low down will be missed by examination with proctoscope for the elasticity of the bowel allows the instruments to force the tumor up and deceive you by thinking the bowel is patent the length of the proctoscope. I call to mind a case in my service a few years ago that acted precisely in this manner. A very remarkable point about some of these tumors is that the patient will tell you the bowels moved regularly every day until the time you were called and found complete obstruction. Of course, in a case with complete obstruction your attention is drawn immediately to the bowel, but the point I wish to make is that to diagnose a tumor of the bowel in the early stages, long before obstruction occurs, the symptoms are often misleading and it takes careful elimination to make a correct diagnosis, and then it is not always possible until the abdomen is opened.

When the case has arrived at the stage of acute obstruction it is not so difficult to locate the tumor, although I have seen cases where it was impossible to locate definitely the area involved. Before the X-ray attained such a high point of efficiency, diagnosis was especially hard; since its development diagnosis in all abdominal conditions is much simplified.

I wish to call especial attention to the fact that so many cases are allowed to go on without correct diagnoses until complete obstruction occurs and the patient is in a state of shock and not in good condition for an operation.

In this connection I wish to report two very interesting cases which I have recently operated. The first was in a patient on whom I operated ten years previously for acute appendicitis. This patient had a very large appendix at the point of rupturing, operated in the first twenty-four hours following attack. In addition the patient was found to be suffering from tubercular peritonitis with considerable free fluid in the peritoneal cavity. The entire peritoneal surface was studded with miliary tubercles. The appendix was removed and iodoform gauze drain inserted for twenty-four hours. The patient had an uneventful recovery and remained well for ten years, when she came to me again suffering with pain temperature and small tumor in left pelvis and a history that aided me in making a diagnosis of pus tube.

I operated and removed a tube containing half ounce of thick creamy pus and found the tubercular peritonitis all healed and a peritoneal surface as smooth and healthy in appearance as I have ever seen. There was a mass of old adhesions in the left pelvis but on account of the pus present I did not deem it advisable to break them up at this time. In this case also recovery was prompt and uneventful. Three months later the patient returned complaining of pain in left pelvis which was much exaggerated on going to stool, although she said that the bowels acted about as usual. On examination I found a mass in the left pelvis, a very much enlarged and retroverted uterus all bound together and very tender. The pain on defecation I presumed was due to the pressure of the womb on the rectum and to adhesions. As is my custom in all abdominal operations I prepared for any eventuality and when I opened the abdomen found a tumor of the sigmoid with the lumen practically occluded. Adhesions were so dense and everything tied together in such a mass that it was with difficulty the anatomy could be made out. A resection of five inches of the sigmoid was done and on account of the dense adhesions which it was impossible to free I found that it would be impossible to anastomose the two ends, hence a side to end anastomosis was made with the ileum and the proximal end of the sigmoid was closed with a purse-string suture. The patient had a very remarkable convalescence and has remained well for about eight months. It is not often that we have the opportunity to operate on the same patient three times for such a variety of troubles and have such uniformly good results.

The next case came under my observation late in December past and with a very indefinite set of symptoms. She had complained of indigestion and pain in the region of the stomach and some tenderness in right lower quadrant, no constipation and no vomiting. Patient was forty-six years of age, free from temperature, and well nourished on admittance to my hospital. On examina-

tion I found a small tumor mass low down on right side which was moderately tender. The symptoms pointed more directly to an old pus tube than anything else. After having examined a case thoroughly and used all means at my disposal for making a definite diagnosis, and still not being certain, I feel justified in case of tumor to do an exploratory laparotomy and do what I find necessary. In this case, on opening the abdomen I found a tumor of the cecum and there were several large caseous lymph glands in the mesentery. The entire cecum was resected and a side to side anastomosis made between the ileum and ascending color. This case has made an uneventful recovery—the wound being closed without drains and patient left the hospital on the 18th day following operation.

I believe in the one stage operation in all cases where it is possible, though there are cases that come to us late and in shock where a primary colostomy is advisable and the resection done at a later date.

It behooves us to use every means possible to make an early diagnosis in these cases as the earlier the diagnosis and operation the greater the chances for cure.

A DIRECT METHOD OF BILIARY DRAINAGE.

By Dr. Heath Nisbet, Charlotte, N. C.

A paper on this subject would be incomplete without a brief survey of the development of the duodenal tube, which makes this method possible. Hammeter (1) in 1897 was the first clinician to attempt the construction of an instrument with which to obtain duodenal contents and although he claims he recovered such contents, his instrument was not practicable and he abandoned it in 1898 in favor of Kuhn's (2) instrument, which consists of a metal spiral fitted inside an ordinary large stomach tube. To Einhorn this did not prove practicable and from 1904 to 1908 he conducted a series of investigations on the permeability of the pylorus, developing the duodenal bucket in 1908 (3) and the duodenal tube in 1909 (4)—demonstrating its use at the Lenox Hall Hospital in New York before a group of clinicians. About the same time M. Gross (5) described a similar tube, while Palefski (6) modified it by having a heavier perforated capsule at the end. M. E. Rehfuss (7) also modified the Einhorn tube in 1914 by making the capsule heavier and the perforations larger.

Before going further, full credit must be accorded Einhorn (8) for the early work on duodenal drainage, duodenal alimentation and the study of pancreatic enzymes. He has evolved a very practical way of determining the presence of these various enzymes and their amounts. He has studied normal and abnormal biles which he found present in the fasting duodenum, and further, he has pointed out the different colors of bile found in catarrhal jaundice, cholecystitis, etc., but there was no proof that he was draining the gall bladder and his studies did not progress far enough to be of real diagnostic value. He was on the threshold of the work elaborated by Lyon.

To S. J. Meltzer (9) must go the credit for the suggestion "that the local application of a 25 per cent solution of MgSo4 directly to the duodenal mucosa (without first coming into contact with the gastric musoca) would relax the duodenal wall and probably with it the sphincter of the common bile duct." The action here depends on what Meltzer calls the "contrary innervation" of the biliary system. Doyen (10) has studied the innervation of the gall bladder and his experiments were confirmed by Freese (10) showing that the gall bladder receives both motor and inhibitory filres by way of the splanchnic nerves, which emerge from the spinal cord in the roots of the 6th thoracic to the first lumbar and pass to the celiac plexes. They further show that stimulation of the peripheral and of the splanchnic nerves in the duodenum and common bile duct causes simultaneously a relaxation of the duct sphincter and a contraction of the G. B.

The method in some detail is as follows: The patient presents himself in the morning, having fasted 12 hours; the mouth is disinfected with a weak solution of Lavoris, then K2 Mn2 O8, one to ten thousand, followed by sterile water. Patient swallows tube to stomach, the fasting contents are removed,

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stomach is washed thoroughly with warm water until this water returns sparkling clear and disinfected with Lavoris and K2 Mn2 O8 and again washed with water. Patient drinks 4 ounces of boiled water, lies on right side, with hip slightly elevated and slowly swallows tube up to 75 cm., this should require 20 minutes so that peristaltic waves will carry the olive tip on the end of the tube through the pylorus. The tip should be in the duodenum in twenty minutes; the best method of determining its presence there is the air test. A syringe of one ounce capacity is attached to the tube and the air pushed in slowly. If the tip is in the duodenum, the rush of air will be heard through the stethoscope (which is placed over the duodenal region) followed by showers of crackling rales, due to the peristalsis set up by the air. If the tube is still in the stomach a bubbling sound is produced by the air coming through the water.

The duodenal contents are aspirated and set aside for later study; then the duodenum is locally douched with 75 c.c. of a 33 per cent solution of Magnesium Sulphate, which serves to relax the tonus of the duodenal walls and the circular bundle of muscular fibres or Oddis muscle at the outlet of the common duct. The tube is then connected up to the first aspirating bottle and the Magnesium Sulphate drains back by siphonage. The appearance time of the bile is noted, it should appear normally in two to ten minutes. The first bile together with the Magnesium Sulphate is collected until a deeper color is noted in the glass window of the duodenal tube, which indicates that the bile mixed with Magnesium Sulphate is being replaced by pure bile. The tube is then connected to bottle No. 2 and allowed to flow until the bile again changes, usually to a darker color and thicker consistency. (When the tube is attached to bottle No. 3). When this darker bile suddenly changes to a light lemon yellow color, conection is made with bottle No. 4 and the drainage can be continued further if necessary. The intestines are then flushed with Ringer's solution, using about 300 c.c. of water. All materials used in this work are sterile.

The "A" bile, or that collected in bottle No. 2 is, of necessity, from the common duct with possibly a few drops from the Hepatic ducts. The "B" bile, or No. 3, must come from the gall bladder and this has been convincingly proven by Lyon. The "C" bile is that from the Hepatic Duct and that freshly secreted from the liver capillaries. The contents of each bottle can now be separately studied microscopically, culturally and chemically.

There should be no doubt that the biles "A" and "C" are from the common duct and liver capillaries, respectively, but proof is naturally expected in order to show that the second or "B" bile is from the gall bladder. In support of this contention, I will cite four reasons and will quote freely from Dr. Lyon (11) in doing so:

First—If this law of contrary innervation is a tenable one, if the action of Magnesium Sulphate serves to relax the tonus of the sphincter of the common duct, then it must serve to contract the gall bladder walls and expell its contents, depending on the tonicity of its walls and on whether the cystic duct is patulous.

Second—The color and viscosity of this bile indicates a higher concentration and strongly suggests it as coming from its storage chamber, the gall bladder. In certain pathological states, as cholecystitis and high grade biliary stasis, the bile is thick, at times almost tarry, greenish black and of the consistency all of us have seen scooped out of the operated gall bladder.

Third—The gall ducts are eight and one-half inches in length and one-fourth of an inch in diameter and it is hardly possible that from two to six ounces of bile could come from this portion of the biliary tract.

Fourth—This second type of bile has never been recognized in cholecystectomized patients, but we pass from the light yellow of the common duct to the lemon yellow of the bile capillaries.

This proves that the gall bladder can be medically drained and we will now briefly consider the types of cases where it may help in diagnosis and treatment.

In catarrhal jaundice (12), where the ducts are plugged with mucus, frequent stimulation will relax the sphincter and the bile will clear out much of this mucus. Lyon in a series of cases treated by this method decreased the duration of jaundice by 52 per cent, in comparison to other cases treated by the old method of salines, etc.

It is generally admitted that biliary stasis, plus catarrh, plus infection, leads to gall stones. And we claim that by the use of the Lyon method we can tone up the gall bladder and by causing it to contract at regular intervals, can establish proper drainage. Thus we attack the pre-gall stone period and prevent the full blown case we often see at operation. By getting cases at "the fair, fat and forty" stages and testing them out we may be able to prevent future trouble.

Choledochitis, or infection of the common duct, would present much mucus and swarms of bacteria in the "A" bile, while Cholecystitis, without obstruction, would show swarms in the "B" bile. In addition to this, we often get precipitation of crystalline particles and often epithelium of gall bladder origin.

In post operative cases, where the gall bladder has been removed or merely drained, we often have infection left and it has been shown in a few selected cases that periodic drainage, in addition to autogenous vaccines, have cleared up these cases. Lyon cites a case where four operations were performed upon the biliary apparatus without apparent relief, while under frequent drainages, plus vaccines, the patient has practically been relieved.

It has been shown that cases presenting symptoms of the early or late migranoid types have been greatly benefited and some cases entirely relieved of symptoms by repeated drainages.

In regard to the limitations of this method, it can be easily seen that where the cystic duct is obstructed by pressure from the outside or by large stones and where similar conditions are found in the common duct, this method cannot be utilized for gall bladder drainage. But if after repeated stimulation the "B" bile is not recovered, we can be reasonably sure that there is obstruction from stone in the cystic duct, weakness of the gall bladder musculature, very thick bile or when gall bladder is filled with stones. In our own personal experience during the last three months, we have used this method in thirty cases, but are unable to draw conclusions because we have not followed them long enough. I will say, however, that several cases of the migraine type have been definitely benefited.

Conclusions.

1. The gall bladder can be medically drained by a simple, direct method.

2. Direct drainage offers an aid in the diagnosis of biliary diseases to supplement clinical and X-ray methods.

3. It may be used as the alternative method of treatment in many of the biliary tract diseases, where it is not definitely decided that surgery is necessary.

4. It may be used as a supplementary treatment in post operative cases, where infection remains and drainage is closed.

5. It is of definite value in differential diagnosis.

6. It offers further an opportunity to study normal bile, the action of cholagagues and parallel study on the liver and pancreas.

7. It may be found to cut down the incidence or stone formation and thus cancer of the gall bladder.

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SOME SUGGESTIONS ON HOSPITAL MANAGEMENT.*

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A hospital is necessarily the vicarious home of the sick—physical or mental. That management which best produces the ideal home is the object of my sug-

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gestions. Therefore, the management of a hospital means action of some kind. What I want to suggest is action of the right kind, and how to obtain it.

I saw a friend of mine a few days ago, 66 years old, and he had not used or needed advice or prescription from a physician in fifty years. His personality illustrates a self management through action that produces the highest form of success—health. This friend has a body well adjusted to all the requirements of physical and mental hygiene.

A good body well equipped with all the forces of physical health and a good mind enriched with the principles of mental, moral and spiritual health, can do a man's work.

So with the hospital, we must consider it as a corporate body with a directing mind and make this body and mind like my friend's—well adjusted for all work and health. The superintendent must possess some of the higher centers in the brain to direct its organization to function properly in every department. Every organ in the body with full health works, rests and sleeps with regularity. Therefore, the management must run every department of the hospital in the same way. I receive hospital reports annual and biennial from about all the hospitals in this country. Great many report a medical staff meeting not every day, but so many times a week. This irregularity to my mind interferes with the normal output of efficiency from the medical department that should function as regularly as the normal kidney secretes and excretes, and the product of our medical staff should be delivered daily to the superintendent or medical director. This has been our custom and it works well. We meet at 8:30 A. M. to receive reports from the sick; reports of any new patient who has entered; reports of any recommendation for ones discharge; a full history examination of some patient recently entered, followed by discussion of symptoms and data given by the reader in order to make a diagnosis, if possible.

I believe this is the best method to keep our medical staff fully alive to the demand of this work, for with us it has resulted in hundreds of histories and examinations from a small staff, we would not have had otherwise. However small your daily effort in the right way may seem, over 300 for the year makes a great showing.

I have this more concretely illustrated in these department heads: Steward, Matron, Supervisor of Clothes, Store Manager, Carpenter, Engineer and Farmer—at the daily meeting at 6:00 P. M. When for instance, the matron gives you a menu of the general diet, and the special diet for the sick, and you see that this is a balanced and a proper diet, then you realize that you have this great department doing a wonderful, vital work that nourishes the patients and reacts on you and all other heads of departments in a vitally energizing way. Then the farmer can realize the dignity and importance of his department in producing a great variety of vegetables, chickens, eggs, milk, flour, meal, etc., for the matron. Under this daily propelling action upon our farmer, in eight years his department has developed wonderfully along all lines, the most conspicuous example of which is that of corn producing, increasing from 1,500 to 7,000 bushels.

The supervisor of clothes grows in efficiency and economy by reporting daily upon the entire clothes problem—laundry, making, mending and marking, saving and condemning.

The engineer with his heating, plumbing and toilet work must run his department as the heart must run the body, for the furnaces and boilers at the central station are the heart of an institution. The steward can keep her finger on the pulse of this department by her register in the office and in contact with the engineer at this evening meeting.

One thousand tons of coal have been saved annually by improvements put in this department and twice the heat delivered in the wards and in the rooms.

All departments need the carpenter and his men and his daily report is interesting and acts and reacts on all the others. The mechanical scope of his work includes mattress making, broom making, repairing chairs, benches, beds, locks, houses, carts, wagons, etc.

The store house of an institution is represented by the keeper, who receives many things daily and gives a report of them at the meeting. This report includes meat, flour, meal, milk from the farm, brooms, mattresses, beds, etc., from the carpenter's department, and all things bought by the steward. His

outgo is on record by the requisitions made by every department and his weights and counts must correspond to those made by the one receiving same at each place to which these goods go.

There must be a management to attain efficiency based upon the mental organic unity of the hospital—"United we stand, divided we fall"—"Hang together or will hang separately." "The human body is one and yet has many parts, many as they are, constitute one body." Therefore, in one mind, all of us, whether we are superintendent, steward, matron, supervisor of clothes, storekeeper, carpenter, engineer, farmer, or physician, are vitally bound to form one body, and all nourished by one mind of varied powers. This condition of mind makes for a harmonious whole. Jealousy is excluded where this spirit lives. Were the farmer to say, "Because I am not the matron, I am not of the body," that would not make him any less a part of the body. Or were the carpenter to say, "Because I am not the engineer, I am not of the body," that would not make him any less a part of the body. If our whole body were the matron, where would the farmer be? If our whole body were the carpenter, where would the engineer be?

The superintendent under the directing power of knowledge out of experience must arrange these departments to work in the spirit of unity. If he cannot do this, his organization goes in separate directions, a division of failure.

One department cannot look down with pride and contempt upon others. The steward cannot say to the matron, "I have no need of you," or again the farmer cannot say to the cook, "I have no need of you." Just the reverse. We know of a truth, that if one department is honored, all rejoice in this kind of organization. If one department suffers, all others suffer with it. Such unity also involves mutual dependence, and appreciation of real personal values and in this way a development begins from the primal principle of faith and upon this as inevitable as the night follows the day you can add courage, knowledge, self-control, power of endurance, godliness, brotherly kindness and charity—the last the supreme way including all the rest.

If these things exist in every department, "and continually increase," they prevent these departments "being either idle or unfruitful in advancing toward a full knowledge" of the entire work of your hospital. If knowledge is power, full knowledge of all the departments operations is an essential factor in the successful management of any institution, corporation or business.

Original Communications

MYELOGENOUS LEUKEMIA.*

Fred C. Hubbard, M.D., Statesville. N. C.

Myelogenous leukemia is a primary anemia and has been termed a malignant disease of the blood. It is, by no means, a newly discovered disease. The first case was reported by Hughes Bennett in 1845. It is a disease which is characterized by a persistent increase in the leucocytes of the blood, associated with hyperplasia of the leucoblastic tissues.

The nature of myelogenous leukemia is unknown. The acutely fatal cases resemble an infection, but no organisms have been determined. The disease is occasionally observed in the lower animals, notably the cat, dog, ox, sheep, and chicken.

That the disease is not very rare is shown by the number of cases that are being frequently reported. It may occur at any age, but is most frequent between the ages of thirty and fifty. It is rather more frequent in men than in women, and may be acute or chronic; usually chronic, especially in adults.

Injury to the spleen, pregnancy, lactation, rickets and syphilis sometimes antedate the appearance of symptoms. Some of the patients have a tendency to hemorrhage, but as a rule the disease appears in fairly healthy persons without any recognizable cause. Heredity seems to play very little part in the disease.

The more important morbid anatomy changes in this disease are found in the spleen and bone marrow, and in the enlargement of the liver. The spleen is greatly enlarged due to chronic hyperplasia, and may occupy half of the abdominal cavity. The bone marrow contains a great increase in the number of red and white marrow cells, the fat content being reduced. Myelocytes and various other cells, including red blood cells in all stages of development, replace the fatty portion of the marrow.

The onset of the disease is insidious, and, as a rule, the patient seeks advice for general weakness, with pallor, dyspnea, and digestive disturbances; or abdominal enlargement and glandular swelling may precede any of the above symptoms. Hemorrhages into the mucous membranes, and bleeding of the nose are frequent signs. Attacks of vertigo are common. Often there is tenderness over the shafts of the long bones. Albuminuria occasionally occurs, and there may be a slight amount of fever, both of which were present in two cases to be cited presently.

Priapism is a curious symptom, and which was present in one of the cases to be mentioned. Priapism persisted in this case for three weeks. The cause of this is unknown; although leucocytic infiltration of the veins of the penis has been advanced as the most probable explanation. Leucocytic infiltration of the smaller vessels over the body is a common finding in this condition.

The absolute diagnosis of myelogenous leukemia, however, must be made by the examination of the blood, as it alone offers distinctive features.

The haemoglobin and red blood cells show decided decrease. The red blood cell count is usually below 3,500,000. The color index is moderately low.

Most striking is the enormous increase in the number of leucocytes. The count in ordinary cases varies between 1,000 and 400,000. The average count in 108 cases reported by Cabot and DaCosta was 370,000. Counts over 1,000,000 have been met. During spontaneous remissions, during treatment with the X-ray or benzol and during intercurrent infections the leucocyte count may fall to normal.

While these enormous leucocyte counts are equalled in no other disease and approached only in lymphatic leukemia and in extremely high grade leucocytosis, the diagnosis, particularly during remissions, depends more upon qualitative than quantitative changes. Although all varieties are increased, the characteristic and conspicuous cell is the myelocyte. This cell never appears in normal blood, extremely rarely in

*Read before the Iredell-Alexander County Medical Society, March 1, 1921.

leucocytosis, and never abundantly in lymphatic leukemia. In myelogenous leukemia myelocytes usually constitute more than twenty per cent of all leucocytes. The neutrophilic form is generally much more abundant than either the eosinophilic or basophilic forms. Myeloblasts may be present in small numbers at any stage, and in the terminal stage they may be abundant. An increase in their number is of grave significance. Very constant in myelogenous leukemia is a marked increase in eosinophiles and basophiles.

The red blood cells show changes characteristic of a severe secondary anemia, except that nucleated reds are commonly abundant. They are chiefly of the normablastic type. Megaloblasts are uncommon.

I have two cases which I wish to bring to your attention, in which this most interesting disease is typified. Both of these cases are in males. The first one is an acute or subacute case in a boy of fifteen; the other a chronic case in a man of fifty.

Case I.

J. H., boy, fifteen years of age. Admitted to the Bryn Mawr Hospital March 14, 1920, where I was a resident physician at the time.

Chief Complaint—Priapism and pain in both hips.

Family History—Father living and well, but gives history of pulmonary hemorrhage twenty-six years ago. Mother died with pneumonia. One sister and two brothers living and well. No history of hereditary and chronic diseases in the family.

Past History—Had the usual diseases of childhood. Had a severe attack of rickets during childhood and was very delicate for several years; so much so that he was not expected to live. No history of venereal diseases, operations nor severe accidents.

Present Illness—About four months previous to admission to the hospital he developed pain in the hips following coasting during the Christmas holidays. This has persisted more or less ever since. About two weeks previous to his admission he had an erection which was painful and which lasted twenty minutes. On the day previous to admission he awoke at 3 a. m. to find that his penis was in painful erection. This remained unrelieved in spite of hot and cold applications and the administration of morphine.

Physical Examination.

Head and Neck—Scalp normal. Pupils react normally to light and accommodation. Mucous memebranes of mouth and nose pale. Tongue coated, teeth in fair condition.

Thorax—Heart suggestive of a systolic murmur. Lungs normal.

Abdomen—Somewhat enlarged. Superficial veins distended. Palpation and percussion revealed a markedly enlarged spleen which reached 2.5 cm. below the umbilicus and to the mid line of the body. It was somewhat tender. Liver was not appreciably enlarged. Inguinal glands were slightly enlarged and tender.

Extremities—Normal.

Genitals—Penis in a state of erection and very painful. The pain is so severe that the patient frequently cries out, and cannot sleep at night. Requires morphine for relief.

Urine—Trace of albumen, otherwise negative.

Blood Wassermann—Negative.

X-ray of hips and chest negative.

Blood Count—March 15, 1921, the day following admission.

Leucocytes—400,000.

R. B. C.—2,900,000.

Hb.—55 per cent.

Differential.

Polymorphonuclear leucocytes — 55 per cent.

Small lymphocytes—5 per cent.

Large lymphocytes—13 per cent.

Eosinophiles—2 per cent.

Basophiles—1 per cent.

Neutrophilic myelocytes—20 per cent.

Eosinophilic myelocytes—3 per cent.

Basophile myelocytes—1 per cent.

Normablasts—8 per cent.

Treatment—March 16, 1920. X-ray treatment was instituted by the roentgenologist. This dose consisted of 15 milliampere minutes at a 9 in. air gap, with a focus-skin distance of 7 in. and 5 millimeters of aluminum for a filter. Treatment was first applied to the femurs and afterwards to the spleen by the cross-fire method.

The patient was put to bed, given a light nutritious diet, and ¼ gr. of sodium cacodylate hypodermically every second day.

March 30, 1920. Priapism relieved. Patient rested very comfortably for the first time in about three weeks.

April 28, 1920. The X-ray treatment was repeated, the same dosage being given.

April 29, 1920. Blood picture.

Leucocytes—250,000.

R. B. C.—3,550,000.

Hb.—65 per cent.

Differential.

Polymorphonuclear leucocytes — 65 per cent.

Small lymphocytes—4.5 per cent.

Large lymphocytes—15 per cent.

Basophiles—0

Neutrophilic myelocytes—13 per cent.

Eosinophilic myelocytes — 2.5 per cent.

Basophilic myelocytes—0.

Normablasts—10 per cent.

April 30, 1920. Patient had gained considerably in strength, and feeling much better was discharged from the hospital. He was instructed to return for further treatment and observation. I left the hospital soon afterwards and was unable to follow the case up further.

This patient was admitted to the Carpenter-Davis Hospital on January 11, 1921. Through the courtesy of Dr. Davis I was permitted to study the case and to make the following report:

Mr. W. D., age 50, a farmer.

Chief Complaint—Swelling of the feet, abdomen and genitals, with dyspnea, and digestive disturbance.

Family History—Father died from burns sustained during an epileptic fit. Mother and five sisters living and well. One sister has tuberculosis of the lungs. Wife and two children living and well.

Past History—Had the usual diseases of childhood, including diphtheria. Has had several attacks of acute rheumatic fever with each of which he was laid up for several days. Had a severe attack of influenza in the winter of 1919 from which he thinks he has never fully recovered. Denies venereal infections. No history of tropical diseases, accidents nor operations. He never has been a heavy user of alcoholic beverages. Uses a great deal of tobacco. Patient says that he has been annoyed some with frequency of urination for several months.

Present Illness—Began early last fall (1920). First he was troubled with general malaise and weakness. He noticed that his abdomen and feet and legs were swelling, and that he was short of breath. He noticed also, minute petichae over his body. Was troubled some with blurred vision.

Physical Examination.

Poorly nourished, adult male.

Head and Neck—Scalp normal. Pupils equal and react normally to light and accommodation. Mucous membranes of mouth and nose pale.

Tongue coated and breath foul. Ears normal.

Thorax—Heart and lungs normal.

Abdomen—Somewhat distended. Palpation and percussion showed the spleen to be greatly enlarged and extending below the level of the umbilicus about 2 cm. and to the mid line of the body. The liver dullness extended about 2 cm. below the costal border.

Extremities—Feet and legs greatly swollen and edematous.

Genitals—Show enormous amount of edema.

Blood Pressure—Systolic, 120; diastolic, 70; pulse pres., 50.

Urine—Sp. gr., 1.020, acid reaction, cloud of albumen, many hyaline, hyalogran., and granular casts.

Blood Wassermann—Negative.

Blood count:

Leucocytes—250,000.

R. B. C.—2,250,000.

Hb.—45 per cent.

Color index—.9.

Differential.

Polymorphonuclear leucocytes — 40 per cent.

Small lymphocytes—15 per cent.

Large lymphocytes—7.5 per cent.

Eosinophiles—2 per cent.

Polymorphonuclear neutrophiles — 2 per cent.

Neutrophilic myelocytes—31 per cent.

Eosinophilic myelocytes—.5 per cent.

Basophilic myelocytes—1 per cent.

Normablasts—5.

Megaloblasts—0.

Treatment.

X-ray treatment was instituted by Dr. Ross S. McElwee on January 20, 1920. The first dose consisted of 5 milliamperes for 8 minutes at a 9 in. air gap, with a focus skin distance of 10 in. and 6 millimeters of aluminum as a filter. The proximal ends of the Tibias were selected as the spots for the first treatment.

The swelling disappeared from the patient's extremities and he returned home on Feb. 1st much improved. No other treatment was instituted except that the patient was instructed as to

correct dietetic and hygienic measures.

On Feb. 25th the patient returned to the hospital for examination and X-ray treatment. He felt much better, was stronger, free from swelling except for some abdominal enlargement, and had a much better color.

His blood picture now showed the following:

Leucocytes—208,000.
R. B. C.—2,830,000.
Hb.—70 per cent.

Differential.

Polymorphonuclear leucocytes — 60 per cent.
Small lymphocytes—12.5 per cent.
Large lymphocytes—2.5.
Eosinophiles—1 per cent.
Neutrophilic myelocytes—24 per cent.
Eosinophilic myelocytes—0.
Basophilic myelocytes—0.
Polymorphonuclear neutrophiles—0.
No normablasts nor megaloblasts.

The spleen showed only slight decrease in size.

May 26, 1921. Dr. McElwee gave a second X-ray treatment. The same dose was used as for the first treatment. The proximal ends of the femurs were treated and afterwards the spleen by the cross-fire method.

Authorities seem to be agreed that the benefit derived from radiation in leukemia seems to be due to both the destructive action on the blood and blood-forming organs, and to certain leucolytic substances that are in some manner produced by the treatment.

It has been observed that myelogenous leukemia does not usually respond so readily to treatment after the first or second series.

Splenectomy seems in no way to alter the course of the disease. It is probable, however, that at least in some types of myelogenous leukemia with fibroid spleens and relatively low leucocyte counts, that splenectomy may be justifiable for the comfort of the patient. The mortality from the operation seems to be around 50 per cent.

In radiation seems to lie the only hope for delaying the process and prolonging the remissions of symptoms in this otherwise rapidly fatal malady.

Note—Slides were made showing the blood picture of these cases and shown at this meeting verifying the findings as reported.

RADIUM THERAPY AS AN ADJUNCT TO SURGERY IN INOPERABLE MALIGNANCY.*

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and
Albert W. James, A.B., M.D.
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It is the intention of the writers to limit the scope of this paper to those cases of inoperable malignancy involving the uterus, to report of their experiences in several cases of this type, and to raise the point at issue whether or not these cases should be operated upon at a later date, if all of the gross signs of the carcinoma have been cleared up.

Within the last two years, we have had in our experience fifteen such cases in which radium therapy was used with such encouraging clinical results that we have long since ceased to regard these patients as doomed to an untimely end with intense suffering. By no means do we claim that all of these cases can be cured entirely with radium therapy, but the process of the disease is checked, the clinical signs and symptoms, both local and general, are abated in the majority of cases, and vaginal examination fails to reveal further manifestations of the formed malignant condition.

The usual histories obtained in these cases may be briefly summarized as follows, viz:

Hemorrhage—This is usually the first sign noticed, and it occurs in various phases. In women of middle life, the bleeding may first manifest itself after coitus. Bleeding at the menopause should not be taken lightly, and, especially, if it comes on after the menopause, when a careful local examination should be made. The bleeding at first is slight and may be only enough to tinge the watery discharge which is likewise present. These hemorrhages gradually increase in frequency and severity.

Vaginal Discharge — Accompanying the hemorrhage, there is usually a thin, watery discharge, which is persistent. This continues to become more profuse, gradually becoming of a thin, muco-

*Read before the Surgical Section, Medical Society of the State of North Carolina, April, 1921, meeting, Pinehurst, North Carolina.

purulent nature, and of a very offensive odor.

Pain—Unfortunately, pain is not an early symptom in carcinoma of the uterus. After the disease is far advanced, it may be present, but the most common complaint is a feeling of weight and uneasiness in the lower part of the abdomen and back.

The purpose of this paper is not to discuss the diagnosis of carcinoma of the uterus, but the reason for giving the composite signs and symptoms is in explanation of how easily it is for these conditions to progress to a stage where they are inoperable, and also to show later on how one of the beneficent results of the radium is to check these annoying conditions.

The success of the radium treatment of malignant neoplasms depends largely upon having absolute control of the case and giving massive doses of irradiation as often as the clinical conditions warrant. It is our custom to insert the radium within the birth canal in direct contact with the diseased areas, paying particular attention that the cervix of the uterus will receive thorough exposure, and leaving it in place for a primary dosage of four hundred to six hundred milligram-hours. The radium is carefully screened and the rays filtered through the containing glass capsules, an aluminum or brass capsule, and one or more sheets of lead-foil of one millimeter thickness each. The whole radium body, with the above screens and filtering substances, is wrapped in rubber tissue and further filtered this way. The amount of radium used is from thirty-five to sixty milligrams.

After the first treatment of four hundred to six hundred miligram-hours, the patient is instructed to return for the second treatment in ten days or two weeks. Subsequent irradiations are given at two weeks intervals for several weeks, then at three weeks intervals, and, finally, at four weeks intervals, over a period of several months, or so long as the conditions indicate. During this period of radium treatment, the patient's general bodily health is carefully looked after. Tonics of iron and arsenic are prescribed, together with a nutritious diet. In connection with the irradiation at the site of the carcinoma, it is well to mention that a thorough and systematic exposure of the body of the patient to the X-rays is made.

We shall consider the results obtained within the first two months of treatment first, that is, after four radium exposures have been made. The hemorrhage in practically all cases ceases or is checked considerably by this time. Naturally, there will follow a corresponding upbuilding of general vitality and body weight. We have had several cases which were bed-ridden for weeks before they started treatment; after being under radium treatment for two months, they were able to be up and about and attending to light household duties. The vaginal discharge, which has been profuse, muco-purulent in character, and of a very offensive odor, becomes somewhat lessened after the second treatment and is usually stopped entirely with the fourth. If no other benefit were derived from the radium treatment of inoperable carcinoma of the uterus than this one alone, the efforts could be regarded as rewarded, because the majority of these patients have been living in an atmosphere rendered so foul by the vaginal discharge that they were almost unbearable to themselves and other members of their household. The pain and feeling of weight and discomfort in the lower part of the pelvis and back are soon alleviated. The appetite returns and with it increased body weight and vigor. The blood picture, which was that of a pronounced secondary anaemia, rapidly improves, keeping pace with the general constitutional upbuilding.

From this early improvement in the first two months of treatment, there is a gradual and continuous return of the patient to her former good health and activity. The gross changes at the site of the carcinoma are most interesting to watch. Large, ulcerated areas along the vaginal walls and extending up into the fornices heal with a minimum of cicatricial tissue formation. Nodular and cauliflower-like growths on the cervix disappear and the healing process takes place so smoothly that often it is hard to discern where the former growth was. In many cases all former gross evidences of the carcinoma are so completely removed that vaginal examination fails to show where it was. All cases are kept in touch with and instructed to report for examination every three months after they are discharged

from treatment, or earlier if they have any symptoms resembling the original condition.

The following three case reports are taken as typical of the fifteen cases in our series. They comprise practically all of the features and results in the cases treated.

Case 1—Mrs. H. P. W. Came under observation October 12, 1919. History of menorrhagia, metrorrhagia, offensive vaginal discharge, and loss of appetite. She had lost thirty pounds in weight, and had been confined to her bed for eight weeks previous to her admission to the hospital. Was brought in on a cot. She had suffered several severe hemorrhages, each one more profuse than the preceding one. Examination showed the vagina to be filled with a hard, friable, cauliflower-like growth larger than a man's fist. This mass could be traced up to the cervix, that is, towards the dome of the vagina. The right lateral fornix was indurated with an extension of the growth. The first treatment consisted of six hundred milligram-hours of irradiation. Two days later a second treatment of six hundred milligram-hours was given, and the patient was sent home. Two weeks later this same patient rode to the hospital in an automobile and walked into the building. She reported that the hemorrhages had practically ceased and that she was feeling much better. Examination showed that the mass in the vagina was much smaller, and the contour of the cervix could be made out without any difficulty. It felt like a hypertrophic elongation of the cervix with erosion of the lips. After two months of treatment with radium, this patient felt so much better that it was with difficulty that we persuaded her that she must continue treatment. She was rapidly gaining back her strength and weight and was attending to all her household duties. During a period of six months she was given about 5,000 milligram-hours of irradiation. After this time she was discharged with instructions to report for examination every few months. All former manifestations of the carcinoma have disappeared and there is no recurrence after one year.

Case 2—Mrs. H. N. Came under observation December 9, 1919. Age 39. She gave a history of having had a pan-hysterectomy performed eight months previously for carcinoma of the cervix. She complained of loss of weight, strength, and appetite, vaginal hemorrhages of increasing frequency and severity, profuse vaginal discharge of an offensive odor, and distress in the lower part of the abdomen and back. When a vaginal examination was made, the dome of the vagina and the lateral walls were found to be infiltrated with a hard, carcinomatous growth. The initial treatment consisted of five hundred and fifty milligram-hours of radium exposure. The discomfort was relieved after the first treatment. After three irradiations, the hemorrhages and discharge had been checked, and she was greatly improved in general bodily health. In all she received about 4,500 milligram-hours of radium treatment. The last examination showed no evidence of the malignancy. The vaginal mucosa was restored to very nearly its normal elasticity and pliability, with very little cicatrization. Nine months after the last treatment she was in good health with no return of the carcinoma.

Case 3—Mrs. J. C. Age 65. Came under observation in March, 1920. She gave the usual history of loss of weight, vaginal hemorrhages, offensive discharge, and pain in the lower part of the pelvis and back. She stated that urination and defecation were interfered with. The hemorrhages were so severe at times that she would become almost exsanguinated. Vaginal examination revealed extensive erosion and nodular involvement of the cervix, infiltration into the lateral fornices, dome of the vagina, broad ligaments, base of the urinary bladder, and cul-de-sac of Douglas. The uterus was enlarged, firmly fixed, and immovable. The first treatment consisted in dilatation of the cervix as much as the friable tissues would permit and insertion within the cervical canal of the radium body for six hundred milligram hours. From the start this case showed encouraging improvement, but we could hardly hope to get complete results. After 2,000 milligram hours of irradiation, the hemorrhages, pain, and distress at urination and defecation had disappeared, though there was still evidence of the presence of the carcinoma to be made out upon vaginal examination. The cervix by this time had been reduced to such a size and of such consistency that complete dilatation and insertion of the radium

within the body of the uterus could be accomplished, which we did on two occasions. Although we carried out the routine raying of the entire body in this case, evidently it did not accomplish the desired results, for metastasis to the liver took place. At present, after nearly a year of treatment in which this patient has received over 5,000 milligram hours of irradiation, this case has proved refractory and is in a condition where radium therapy is of no avail. We do not feel that all of our efforts have been for naught, for we have surely prolonged the life of this individual by several months and she has been relieved of all of her previous suffering. Even though she is now in the throes of a rapidly developing fatal cachexia, she is comfortable and does not have to be given opiates. This case is cited to show that radium should be used in all cases, even though the chances are very much against one for obtaining results.

From an experience in the treatment of inoperable carcinoma of the uterus as outlined in this paper, one may appreciate why we are so enthusiastic over the results obtained with radium therapy. In many instances all clinical manifestations of the disease have been removed entirely and remained so, that we are almost tempted to call the results cures. The question in our minds is whether we should insist upon performing a Wertheim hysterectomy upon these cases after all the local signs have been cleared up and the patient has been restored to a state of health which would make her a good operative risk, or we should call the case a clinical cure and run the chance of a recurrence. Case reports gathered from the literature seem to indicate that the recurrences which occur after radium therapy has apparently succeeded in inoperable cases are refractory to irradiation again.

We may summarize by saying that radium therapy is indicated in all cases of carcinoma of the uterus. It should be used pre-operative and post-operative in those types where it is probable that the process is amenable to operation. Surgery has proved its worth in the treatment of carcinoma of the uterus and we do not think that radium should replace it until more clinical work has been reported in which radium alone was used. In the inoperable cases, radium is of untold value to check the hemorrhages and offensive discharge, to prolong life and relieve suffering, to enable the case to become a fair risk for radical surgical procedure, and, we even venture to say, to produce clinical cures. It is too early to say what the outcome of these cases will be three or five years from now, but surely if the distressing symptoms are cleared up and the patient is enabled to enjoy life for several years longer than she would have without the treatment, then we are more than justified in advocating radium as the therapeutic agent par excellence in the treatment of inoperable carcinoma of the uterus.

THE DECLINE OF THE ART OF PRESCRIBING.

By Dr. E. C. Boyette.

Oliver T. Osborne, professor of Therapeutics, Yale University Medical School, said: "Therapeutics is the ultimate aim of the science and practice of medicine. It includes not only drug therapy, but also everything that has to do with treatment of disease, the management of the patient, his convalescence, his permanent return to health, and the protection of the well against disease."

Therapeutics is then the broadest and the hardest subject for the medical student to grasp, and it is safe to say that the young graduate in medicine, even after a hospital course, is less prepared in the bedside and office management of disease than in any other branch of medicine. He may know anatomy and physiology, he may understand histology and pathology, he may be an expert bacteriologist and have etiology down to a fine point, but with all of these attainments, he is still incompetent to treat diseased humanity, because he is deficient in the knowledge of drug therapy, the means given him to fight disease and accomplish the good expected of him as a physician.

This decadence of drug therapy in the medical profession is in evidence everywhere and amounts to almost "Therapeutic Nihilism," and it is directly traceable to the very defective system of teaching Materia Medica and Therapeutics in our medical schools.

Investigation of about one hundred medical colleges brings out the startling

fact that the teaching of drug therapy occupies a very minor place in the college curricula. With this fact before us. and realizing our own weakness, it is high time for us to get busy and correct the defect before it is too late. The chiropractics, osteopaths and various other cults are all fostered and nourished by us, because of this deficiency. The laity has demanded of us relief from their suffering, and we in turn were unable to give it, largely because we are deficient in our knowledge of the action of drugs and how and when to give them.

In reading the medical journals of today, we find them full of the best scientific methods for obtaining a correct diagnosis and the latest and most successful surgical procedure, but scarcely anything as to drug therapy. Why this discrimination against the physician of internal medicine is hard to say, unless it is a lack of a proper understanding of the action of drugs or a supposition that all physicians should know how to treat a disease after a diagnosis is made. Just as important as it is to know the pathology and etiology of the disease we have to deal with, just so important is it for us to know the treatment needed, when it should be given, how it should be given and the dose indicated in each case. Instead of prescribing drugs of standard quality, recognized by the U. S. P. and N. F., there is a growing tendency among the medical profession to prescribe "ready to use" propriatory preparations manufactured by Tom, Dick and Harry (of which there are about 15,000), the names and actions of which are as confusing as a Bolshevist and are about as unreliable. It would be much more profitable for us to have a sufficient knowledge of the more important drugs among the 1,500 preparations recognized by the U. S. P. and N. F. and be able to build our own prescriptions, for then we know for a certainty what we are getting and what therapeutic effect to expect, than to try to remember the component parts of the various preparations offered to us, each recommended as superior to the other by the various manufacturers.

By this system of prescribing by the physicians, we work a hardship upon the druggist, making him carry thousands of dollars worth of useless stock, a large percentage of which is virtually the same, but made by a different house, necessitating him in turn to increase the cost of the medicine to the patient, in order to make a living percentage.

This all works to the detriment of the doctor.

First: He does not get as good results as he should.

Second: The druggist gets the patient's money and the doctor not even gratitude.

The physician who orders such preparations does not realize the positive harm he may do his patient, not knowing the formula of the medicine he orders, he may give something that is very dangerous, because of some existing complications or idiosyncrasies on the part of the patient.

The time when medicine should be given plays a very important part in obtaining beneficial results. It is a known fact that certain medicines given just before meals, or close to meal time, has entirely different effect, from what it would be if given on an empty stomach. We should know these drugs and be specific in our directions when they should be given, not merely writing "a dose every three or four hours," and trusting the rest to the patient.

I have seen in hospital practice, where two or more medicines were ordered given at four hour intervals, where the nurse gave them all at one time. You can readily see the danger from such practice.

It may seem rather pessimistic, but if we are to maintain the high standard of efficiency in combating disease in the future, that we have possessed in the past, we must not neglect to inform ourselves as to the action of, and the use of the drugs possessing preventive and curative properties, the life savers of the physicians.

To enable us to maintain a higher standard of efficiency, we must have better college facilities for instructing the medical students. To accomplish this, it is necessary to have a complete pharmaceutical laboratory, containing the most useful drugs of the U. S. P., and the student required not only to know the dosage and therapeutic actions, but be required to familiarize himself with the color, odor and taste, as far as safety permits. During his senior year, he should be required to do prescription building for the various diseases, noting the change in color, pre-

cipitation, etc., and especially as to palpableness of the mixture.. If this is done, the young physician will enter practice well fortified against the placebos and "ready to use" preparations, placed before him (not written by physicians, but by $50.00 a week employees of manufacturing houses, who know nothing of the pathology of disease).

When this knowledge is acquired, then the ultimate aim of the science of medicine will accomplish the good intended.

The serum therapy is very much in the limelight at present, and is, to some extent, possibly responsible for neglect of drug therapy. I do not wish to discount the excellent results obtained by this treatment, but I do wish to impress the fact that drug therapy should not be neglected, because of serum therapy, but rather that they be used together, working for the same end, the cure of disease.

In conclusion, I suggest more conscientious study of drug therapy; better and more up-to-date college instructions; the use of recognized U. S. P. and N. F. preparations; tabooing the unscientific preparatory preparations; formulating our own prescriptions for each case, keeping in mind that we have certain pathological conditions to deal with, which are not the same in different persons, suffering from the same disease.

Like Davey Crockett, be sure you are right and then go ahead, and you will then have accomplished the ultimate end of the science of medicine, the cure of disease.

FOOD FOR THOUGHT.

(By E. E. Elliott)

"Dead beats" have elongated gall.

Dollars oil the wheels of progress.

Unpaid bills give doctors insomnia.

Book accounts are not good collateral.

Prescription for happiness: "Paid in full."

A dollar in hand is worth two on the books.

A lean purse soon causes financial paralysis.

A payment on account is good for the blues.

Verbal promises to pay are not good at the bank.

Unpaid bills gather no moss. They gather cobwebs.

Delinquent debtors often require vigorous treatment.

Ability is a doctor's stock in trade. Don't borrow it.

Waste no time operating on a "dead beat." Blast him!

The laborer is worthy of his hire, likewise the doctor.

Those who can pay and fail to do so are society's enemies.

Never put off until tomorrow what may just as well be paid today.

Taking a doctor's time to no avail is equivalent to picking his pocket.

A doctor serves without thought of reward. All he expects is his money.

Haste makes waste, but prompt payment of bills is not haste, it's business. —Written for the Physicians and Surgeons Adjusting Association, Kansas City, Mo.

SOUTHERN MEDICINE AND SURGERY

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M. L. TOWNSEND, M. D.
J. C. MONTGOMERY, M. D. } *Editors*

CHARLOTTE, N. C.

"Read not to contradict and confute, nor to believe and take for granted, nor to find talk and discourse, but to weigh and consider."—Francis Bacon.

SOUTH CAROLINA MEETING.

It gives us much pleasure to announce a most interesting and helpful meeting of the South Carolina Society, held in Columbia April 19-20.

The attendance exceeded that on any former occasion and indeed exceeded the provided accommodation and the meetings were moved, impromptu, to the general assembly room in the State House.

Three hundred members and invited guests were served at the noon banquet at the Hotel Jefferson, Wednesday, April 20. This occasion will long be remembered as being permeated with jolly good fellowship and the most kindly feelings.

The Columbia doctors did honor to themselves as hosts on this occasion.

Another most pleasing social event was the informally formal reception given at his beautiful home by Dr. Taylor. Here men rubbed elbows together and became more closely united by ties of intimate acquaintance.

The South Carolina Nurses' Association held its annual meeting at the same time and the conjoint sessions of these two associations did much toward unifying their efforts. The doctor and the nurse stand on common ground with the same purpose and aim in view. This purpose is to honestly serve humanity in its illness and to gain for this service a fair and just reward.

Rock Hill was chosen as the meeting place for next year and Dr. Harry Lee Shaw was elected president.

PINEHURST MEETING.

On April 26 and 27 the sixty-eighth annual session of the Medical Society of North Carolina was held at Pinehurst.

About four hundred doctors registered in attendance and a great many were accompanied by their wives so that the occasion was not only a most profitable one from a scientific standpoint but was also peculiarly enjoyable as a social event.

The week began with a meeting on Monday, April 25, of the Health Officers' Association and the entire day and evening were taken up with subjects pertaining to Public Health and Preventive Medicine.

An especially interesting symposium was the one on Public Health Nursing. Five papers were read on the various phases of this subject. With the whole country in a state of, almost, turmoil over the question of adequate nursing, especially in rural towns and the country, this matter of the Public Health Nurse is a most pertinent one. With the adjustment of details and a more cordial understanding between nurses and doctors the Public Health Nurse promises a happy solution of what today is a most vexing problem. It is at just such meetings as this that these problems will be worked out and an amicable solution reached.

On Tuesday morning, April 26, the formal opening general meeting of the State Medical Society was held in the ball room of the Carolina Hotel.

Mr. Tufts welcomed the society most cordially and this was responded to on behalf of the society by Dr. Street, president of the Moore County Society.

After the president's annual address the society adjourned to the various section meetings. These continued throughout the day and evening, all day Wednesday and until noon Thursday.

There was a crowded attendance at the ball Thursday night.

Unfortunately the business sessions were attended with much political maneuvering and an outsider might have suspicioned that some men came to Pinehurst primarily for political reasons rather than for the avowed purpose of being helped and helping others to better perform the duties of life in alleviating man's ills. A medical so-

ciety, or any other society, that is controlled by a clique and operated for the selfish personal emolument of a few, is steering straight for the rocks and breakers.

The medical profession of North Carolina wants noble ideals and altruistic motives—wants an association of its members that in brotherly love and a fraternal spirit will lift up the profession to higher standards and more efficient service.

There are 2,236 regularly licensed physicians in North Carolina and 1,507 members of the State Society (so listed in the directory), less than 67 per cent —only two-thirds. What about this other third?

United, we stick.

Divided, we are stuck.

Let's get busy correcting errors, magnifying the good and enroll every eligible member of the profession in a united campaign to advance the profession's best good and the public's best health and clean living.

NEW HOSPITAL.

Dr. C. S. Lawrence, Winston-Salem, N. C., is building a new and thoroughly equipped and modern hospital. The building, 80x26 feet, two stories high, is of concrete and fireproof. It is hoped that it will be completed ready for occupancy by August 1st and then the building now occupied by the "Lawrence Hospital" at Liberty and Seventh streets will be abandoned.

The Lawrence clinic at Cherry and Fifth streets will, however, be maintained by Drs. Lawrence, Stirling and Cook.

A Profitable Vacation.

When, where and how shall the busy, tired, general practitioner spend his summer vacation this year? If this question is put to any one of a score of Southern pediatricians within the next three months, the answer is simple to forecast. Judgment will tell him to choose the last week in July and the first week of August, whatever other time he may take in addition; it will tell him to select the mountainous western part of North Carolina—the playground of the South—where the Alleghanies climb to a height the greatest of any point east of the Rockies; and it will urge him so to pass his time that, when he returns to his life of service to his fellows, he will do so, rested in body, refreshed in spirit, and richer in his mental equipment for the task to which he has consecrated his life. The Southern Pediatric Seminar, made up of a group of children's men, has so arranged its schedule that it can offer just such benefits to its registrants. Situated where it can call upon a large infants' and children's sanitarium for clinical material for its teaching of the diagnosis and treatment of the diseases of the sick child; where it can study the workings of a health program for a community which caters to well children from all over the Southland; and where it can avail itself of the hospital facilities offered by one of the medical centers of the State; it offers an unexcelled opportunity for combining a review of the fundamentals of the study and treatment of children in health and disease, with a restful vacation among congenial spirits. If registrations continue to come in as they have been doing, it will be necessary soon to close the registration for this first season; but it is sincerely hoped that this may become a yearly feature in the medical program of the South, and that the Southern Pediatric Seminar may become the mecca to which will resort all those throughout our section who wish to bring themselves up to date with regard to the latest and best points in applied pediatrics. If the success of this project shall encourage those engaged in other specialties to essay similar teaching seminars for the summer months, it will be serving to further most admirable end.

Oriental University—Revoke Its Charter.

Our Paris correspondent this week reports that the Oriental University of Washington, D. C., is offering medical and dental degrees for sale in France. Only a few weeks ago similar reports were received from Switzerland. Repeatedly, publicity has been given showing the low type, if not the fraudulent character, of this institution. Its medical diplomas are not recognized by any state licensing board, so far as we know. Nevertheless, it is still being permitted

openly to disgrace American education in the eyes of the world. The responsibility for this institution rests with Virginia, from which state it obtained its charter. It is high time that this charter should be revoked. Will Virginia continue to foster this burlesque on education, which is disgracing American educational institutions abroad?—Jour. A. M. A., Feb. 12, 1921.

American Medical Editors' Association.

The fifty-second annual meeting of the American Medical Editors' Association will be held at the Hotel Lenox, Boston, Mass., on Monday and Tuesday, June 6th and 7th, under the presidency of Dr. H. S. Baketel, editor of the Medical Times.

A novel feature of our literary program will be introduced this year in the shape of a symposia, which will be discussed by various members. The subjects will be:

"Group Practice and the Diagnostic Clinic."

"What Should Be the Attitude of the Profession Toward Health Centers."

"The Correlation Between Editorial, Advertising and Subscription Work."

Every doctor, even remotely interested in medical journalism, will find it to his advantage to attend, and is most cordially invited.

Gynecology and Obstetrics

Robt. E. Seibels, M. D., Department Editor

The Use of Pessaries.

Kelly and Fricke review the history of the pessary. Though pessaries are no longer used in the routine treatment of gynecological lesions, they are still employed in the treatment of retroflexions of the uterus with descensus and certain cases of prolapsus. They are of no value, however, in cases of anteflexion. The important factor is not flexion but descensus, and the answer to the vital question as to whether or not a pessary will benefit the condition depends on the findings of an examination to determine whether or not a decided descensus is present. This is best revealed when the patient is examined in the standing position. The best form of pessary is usually the simple ring made of thick rubber but in certain cases a perforated hard rubber disc is better. Next to the simple ring the authors as a rule prefer the old Hodge pessary.

When the anterior wall of the vagina pouts out neither the ring nor the Hodge pessary will prove satisfactory. In such cases the Gehrung pessary may be of value.

When there is well-defined prolapsus of the uterus with eversion of the anterior and posterior walls and the cervix is at or near the orifice any one of several pessaries may be used if there is a sufficient vaginal outlet to support the instrument. A simple light glass ball forms an excellent support.

The use of pessaries is associated with great danger as the patient may be infected with syphilis or gonorrhoea by a contaminated, unsterilized pessary. Before use the pessary should be well washed with soap and hot water and then kept in absolute alcohol for some hours. It is a most reprehensible practice to remove a pessary from a patient and simply rinse it before putting it away. Soft rubber and air inflated pessaries should be discarded as they provoke irritating secretions.

The patient wearing a pessary should take a daily douche of a pint of hot water in which a tablespoonful of salt has been dissolved. It is not necessary to remove the pessary during menstruation but it should be taken out once every three or four months and left out for several days.

The pessary is often used as a temporary expedient pending operation or to determine whether an operation giving support to the uterus will relieve the symptoms. It is of benefit also in the cases of old women for whom an operation would be too hazardous.—Kelly, H. A., and Fricke, R. E., Therap. Gaz., 1921, xliv, 5.

Intravenous Use of Corpus Luteum Extract in Nausea of Pregnancy.

Intravenous injection, John C. Hirst, Philadelphia (Journal A. M. A., March 19, 1921), believes is, the ideal method of administration of corpus luteum extract. The material used is carried directly into the circulation, giving the most rapid absorption possible. It is possible and advisable to use a consider-

ably larger dose (two or three ampules) than is possible with the intramuscular injection, in which more than 1 c.c. causes considerable local reaction. Each ampule contains only 0.2 gm. of the extract, and in this way the necessary total quantity can be introduced more easily and quickly. There is no local reaction or discomfort of any kind after the injection. Intravenous administration often controls the vomiting promptly, in cases in which intramuscular use has failed. The method of administration does not differ materially from the ordinary intravenous injection. The dosage will vary, depending on the type of case under treatment. Ambulatory patients who can come to the office usually receive 2 c.c. every other day. In more severe cases, when office visits would be a hardship, the patients receive 2 c.c. daily, given at home. In pernicious cases 2 c.c. is given twice daily, and the patients are confined to bed. Experience has shown that every patient should receive at least 12 c.c. entirely irrespective of the fact that they respond quickly and favorably to a smaller number. If fewer are used, relapses are common, and are more difficult of control than the original attack. Anaphylactic reactions need not be feared. The presence of a goiter in early pregnancy absolutely contraindicates the administration of corpus luteum extract, either intravenously or intramuscularly, for the control of nausea. In Hirst's experience, every such patient has been made much worse by this treatment.

Urology

A. J. Crowell, M. D., Department Editor

The Treatment of Gonorrhoeal Complications by the Combination of Antigonococcus Serum and a Temperature-Raising Agent.

The author reports the result of further work with his antigonococcus serum. In 1916 he gave the results of its use in 120 cases, stating that it had little effect in the open type of gonorrhoea (of the urethra, cervix, ducts of Bartholin's glands, conjunctiva), while in the complicated or closed type of gonorrhoea (arthritis, epididymitis, prostatitis, diseases of the eye and adnexa, infiltrations of Bartholin's glands, and peri-urethral infiltrations) its action was usually very marked.

Because certain cases were refractory and in others expected improvement did not occur, the author attempted to improve the serum, making it of more uniform value. Taking into consideration the sensibility of gonococci to warmth, he added a temperature-raising agent to the serum, especially dead cultures of typhoid bacilli, so that the serum has now a double action due to the effect of the antibodies and fever.

Reenstierna claims that this serum is much superior to his first serum, and reports that it causes very marked and prompt amelioration of symptoms in arthritis, prostatitis, and epididymitis followed in a short time by cure.

The untoward effects of the serum treatment are chills and high fever after the injection, considerable tenderness at the site of injection persisting for some days, and at times a passing tenderness in the inguinal lymphatic glands.—Reenstierna, J., J. Urol., 1921, v. 63.

A Note on the Use of Antigonococcal Serum.

Wassermann showed that the toxin of the gonococcus is contained in the body of the organism and does not belong to the diffusible group. This fact was applied by Rogers and Tory in 1906 in the successful use of antigonococcal serum in the treatment of gonorrhoeal rheumatism. Paraf recently pointed out the resemblance between the meningococcus and the gonococcus and emphasized the necessity for methods of applying the serum locally in order to bring it into immediate contact with the microbe. With Nicolle's serum he cured 14 of 16 cases of arthritis in rabbits by intra-articular injections of the serum. The serum is active, possessing agglutinating, bacteriolytic, and bactericidal qualities; it has therapeutic properties against different strains of gonococci.

Ivens employed the serum in about 30 cases, in 22 of which tubal infection was the most marked feature. Endocervitis occurred in 3, and in 3 there was arthritis which in one instance developed during pregnancy and another in the puperperium.

Three methods of application were used. In one series of cases the serum

was given subcutaneously diluted in normal saline, usually in a dose of 20 c.cm. This was repeated at intervals of two, three, or seven days, from 20 to 200 c.cm. being given in all. In another series of cases with dripping pus tubes or pyosalpinx, the tubes were washed with normal saline and a dose of 20 c.cm. of serum was injected into the tubes, some of it into the ovary, and the residue into the pouch of Douglas. The abdomen was closed without drainage and the patient placed in the Fowler position. To avert anaphylactic shock, a subcutaneous or rectal saline injection was given simultaneously as sodium salts have a protecting action against the assaulting infection. In cases of endocervicitis with profuse leucorrhoea serum packs in the vagina alternated daily with packs moistened with equal parts of 10 per cent saline and 5 per cent phenol were used. The results in the cases treated with local applications are particularly good; one woman has become pregnant and another is entirely well after previous ineffectual treatment for two years.

The serum was not used intravenously as fatal anaphylactic shock is apt to result from this method.

With 2 exceptions, the patients were married women; 13 had no children, and 9 each had only 1, a striking percentage of sterility. Subcutaneous injections were used in 19 of the 30 cases, intratubal and peritoneal injections in 6, vaginal packs in 3, and serum dressings in 2 cases of bartholinitis.

The results show good immediate recovery of all the patients. There were 3 definite failures in the after-histories. One failure, which occurred, in an acute case, was probably due to the use of an insufficient amount of serum. The other two patients had relapses after several months of good health, but reinfection was probable. Relief from pain was a marked feature in all cases.

These results warrant further experiment and study to determine the best method of administering antigonococcal serum with regard to the site of injections, their frequence, and the amount of the serum to be given. Six special cases are cited.—Ivens, F., Brit. M. J., 1921, i, 77.

Trauma as a Factor in the Etiology of Hydronephrosis (Pyelectasis).

The author presents a study of the causes of hydronephrosis with especial reference to trauma. In referring to cases of partial or complete dilatation of the renal pelvis Herrick prefers the term "pyelectasis" to the common term "hydronephrosis," and the use of the prefixes hydro-, haemo-, and pyo- to designate the contents of the sac.

In a study of 48 cadavers the average mobility of the kidney within its supporting structures was found to be 4 cm. on the right side and 4.5 cm. on the left side. The portion of the ureter subject to greatest mobility is the upper 4 or 5 cm. of its course, from the point where it leaves the peritoneum to pass through the perirenal fat to the kidney pelvis. Here it is most subject to angulation and stricture.

In the author's opinion the stages in the development of the type of pyelectasis under discussion are as follows:

Periodic, partial, or complete ureteral obstruction due to renal mobility following trauma or strain; back-pressure on the renal secretion with injury to the secreting mechanism; infection causing pyelonephritis and ureteritis, and still further damaging secretion and the renal parenchyma. Ureteritis is most marked at the point of ureteral angulation and is associated with the danger of stricture formation.

The author gives the details of 9 cases.—Herrick, F. C., J. Urol., 1921, v. 1.

MENTAL AND NERVOUS.

Jas. K. Hall, M. D., Dept. Editor.

Mark Twain, for more than a generation, was probably the best known writer in the United States. One might surmise that he was a keen observer, one who saw deep into things, a democrat, and that his long journey in the flesh was one glad song. But a careful reading of an article in McClure's for April entitled "Mark Twain as Exhibit A"—by Harvey O'Higgins and Dr. Edward H. Reede, induces the belief that he was never comfortably adjusted, that he was always unhappy, and that he died in old age wretched and miserable. The article is well worth careful reading and

re-reading. Harvey O'Higgins might be referred to as a professional contributor to magazines, and Dr. Edward Hiram Reede, the conjoint author, is a graduate from the Hopkins Medical School who practices medicine in Washington City as a specialist in nervous and mental diseases.

Mark Twain came into the world in Hannibal, Missouri, two months before his time, and because of this incomplete intra-uterine development he began life with a physical handicap which remained with him as an annoyance throughout a long and apparently a successful life. But because he came into the world little, too little, he came into it afraid, and this innate fear was deepened by early parental repressions and punishments. His father, John Clemens, was a ne'er-do-well, a dreamer, a would-be inventor of perpetual motion, and a going-to-be-rich-tomorrow man, respected in his community, but a solemn man, who flogged his slaves, frowned at his children, and never smiled or laughed. Mark Twain thought of him as one who hammered into his children moral precepts by the limb of a tree. The humorist's mother was a strong-minded woman, who had no real love for her husband, and she possessed a satiric sense of humor and a firm belief in an avenging Calvinistic God. Sprung from such parents Mark Twain found himself at the development of consciousness in a pioneer settlement. Before the Civil War he had been a printer, but at the outbreak of that struggle he was comfortably established as a pilot on a Mississippi steamer, from which he volunteered into the Confederate service, and from which he soon deserted. Later he went farther west, and his literary career began in San Francisco. But he remained morbid and unhappy, though thought to be a wit and a philosopher, and with the world's plaudits in his ears he died an unhappy old man. He was the victim of a conflict. His father's failure in life caused him to despise his father, and his mother's religious austerity begot in her son if not hatred of the mother certainly hatred of the religion which she professed as well as the God whom she worshipped. His early training would not allow him to dismiss this avenging, awful God from his mind, but it made it impossible for Mark Twain as an old man, overwhelmed with sorrow by the deaths of his own children, to accept Him as a God of love and mercy, and so he died, old and miserable, and uncomforted. The impressions of childhood abide, and they lead either to happiness or to wretchedness, and so far as individual comfort goes, that is what counts, regardless of station or plaudits or titles or fame.

And as for Mark Twain he gave to others much more happiness than he ever experienced himself. But mayhap that is the general plan—the summum bonum?

In the Journal of the American Medical Association of February 26, 1921, a brief article on "Ainhum, a Family Disease," is contributed by Dr. Keith M. B. Simon, of Belize, British Honduras, Central America. The affection is characterized generally by the appearance of a narrow, circular, slowly deepening skin sclerosis, located usually at the digitoplantar fold of each little toe, and it eventuates in painless amputation. The affection, poorly understood, is not unusual in the tropics, where it is confined mostly to negroes, but in this country it is exceedingly rare. The article calls to the writer's mind a case that he saw a good many years ago—certainly twelve or more—when he was a member of the medical staff of the State Hospital at Morganton, North Carolina. The child, about twelve years of age, was a native of Buncombe county, and a student in the School for the Deaf and Dumb at Morganton. The constricting, deepening band appeared not on the little toe, but on the little fingers. The writer made copious notes of the condition and had photographs made of the hands, but press of work prevented him from reporting the case. Heredity in this case did not figure as a possible cause as in those cases cited by Simon in his article.

Orthopædics

Alonzo Myers, M.D., Dept. Editor.

Congenital Dorsal Scoliosis Due to Spinal Defect.

In the case cited by Carroll L. Storey and Carl C. Birkelo, Detroit (Journal A. M. A., March 19, 1921), the spinous processes of the sixth, seventh and

eighth dorsal vertebrae were rather sharply displaced to the right, the greatest deviation amounting to one-half inch. No secondary curves appeared above or below. The flexibility of the spine was somewhat limited in the middorsal region, and normal elsewhere. Twelve ribs could be palpated on the right side, twelve on the left. The upper left rib appeared, however, to be attached to the seventh cervical vertebra. Only eleven dorsal spinous processes were palpable. Stereoscopic plates of the spine revealed two points of abnormality, namely, in the seventh cervical and the eight dorsal vertebrae. The seventh cervical vertebra had a fully developed rib on the left side and a short rudimentary rib on the right. The eighth dorsal vertebra was rudimentary and consisted of a small triangular body wedged in between the seventh and ninth vertebrae on the right side with a unilaterally developed pedicle, transverse and spinous process in no respect different from the corresponding parts on the other vertebrae above and below it. A fully developed rib articulated with it on the right side, and there was no attempt at a corresponding rib on the left side. Thus, there were twelve fully developed ribs on each side, but the first rib on the left was cervical, and counting the rudiment from the seventh cervical vertebra on the right, there were thirteen ribs on that side.

Diathermy in Some Bone Lesions.

The general application on a large scale of physical treatment methods to the whole range of conditions met in war hospitals has called attention to the applicability of such methods to industrial injuries and their sequelae. The use of thermo-penetration in certain wound sequelae has been so general that a clinical discussion of its application is opportune. The selection of this method is based on the well-known fact that between the two active electrodes there occurs molecular friction massage which causes a definite warming of the tissues with an increase in the arterial blood supply, improvement in the metabolism, and greater phagocytosis. The result is a favorable influence on the disease processes. No attempt is made to draw final conclusions or even to determine specific indications for or against physical treatment; the sole object of this article is to point out the results so far achieved as an incentive for further investigation.

Several illustrative cases are cited in detail to show average results obtained with diathermy in conditions of fracture with non-union and osteomyelitis. In one of the cases, the application of a current of 800 to 1,000 ma. (subsequently increased to 1,200 ma.) passing from Crooke's metal "cuff" electrodes along the affected extremities produced unquestionably good results as revealed by successive roentgenograms. Another case also showed a gratifying result. Three cases of osseous non-union and osteomyelitis were only slightly benefited by diathermy.

Certain facts as to this valuable current should be thoroughly grasped by the operator in order that it may be employed accurately. One must be sure that the apparatus employed is really scientifically constructed so as to produce genuine resonance between its component parts as otherwise the absolutely necessary quality of d'Arsonval current is not obtained. Then, during its operation, one must frequently note the tone of the latter so as to avoid its shifting to a thermofaradic or an irregularly interrupted high-frequency current which might prove irritating, instead of soothing. This is of importance when pain is a factor in a case.

—Hirsh, A. B., Surg., Gynec. and Obst., 1921, xxxii, 74.

State Medicine

L. B. McBrayer, M. D., Department Editor

In an article published in the Illinois Medical Journal, February, 1921, entitled "Efficient Public Health Administration the Best Safeguard Against Radical Medical Social Legislation," by C. St. Clair Drake, M.D., the author boldly states that every physician who keeps himself advised with the trend of medical progress is awake to the fact that there is an unusual spirit of unrest in medical matters; a tremendous awakened popular interest in medical-social affairs, and a warranted spirit of apprehension in the ranks of the medical profession.

We must recognize that compulsory health insurance and the treatment of

the sick by governmental agencies is being looked upon with a certain amount of favor by a considerable number of people.

In a spirit of post war unrest the people are desirous of new things and the author thinks new things are bound to come. Whether these new developments are directed into channels of general helpfulness or unto ultimate harm is a matter which rests largely with the medical profession. To placidly sit down and say we want things to remain as they have been, won't make them stay that way.

Trying to dam up the torrent only adds terror to its destructiveness but to direct the current through proper channels liberates power to serve the world.

Standards of public health administration throughout the U. S. at present are not satisfactory.

The medical profession of the U. S. is not doing all that it can or that it might do in the prevention of disease or in the promotion of health. There is even an ill concealed opposition on the part of some of its members to laws, rules and regulations enacted for the purely altruistic purpose of preventing human suffering and the promotion of human efficiency.

The author believes that an united effort on the part of the medical profession in the perfection of public health organizations will effectively still the demand for radical laws, and that the individual physician will find that this perfected public health machinery will contribute materially to his professional and financial success.

X-Ray and Laboratory

Robert H. Lafferty, M. D., Dept. Editor.

In the British Medical Journal for May 22, 1920, Semon has an article on the X-ray Treatment of Acne Vulgaris which is referred to in the April Journal of Roentgenology as follows by Goin:

The etiology and pathology of acne is that the effect of the rays on acne lesions is the inhibition of the physiologic action of the secretory cells of the sebaceous glands, and the dissolution of the fibrous capsules of the infected comedo. Whether or not this is correct, it remains a fact that the X-rays will cause involution, both of the comedo and the deeper nodular abscess and reduce the scarring to a minimum. For simple cases unfiltered rays from a tube backing up between 4 and 5 inches spark-gap are used, giving a four-fifths Sabauraud B tint. This is not repeated within ten days. An erythema is not desirable.

When pustulation and dermatitis are marked, treatment is preceded by a few days application of antiseptic and detergent lotions, after which doses of two-fifth B tint are given at ten-day intervals. In the more advanced stages, with intra and sub-dermic nodules, periglandular fibrosis, etc., harder rays from a tube backing 5 or 6 inches are used; with five millimeters aluminum filter, giving a full pastille dose. After two weeks a half pastille dose may be given at ten-day intervals. Local relapse is rare.

Acne can be permanently cured, no matter in what stage it may be, by judicious X-ray treatment.

MEDICINE

Edward J. Wood, M.D., Dept. Editor.

Technic of Chenopodium Administration in Hookworm Disease.

The experiments reported by Samuel T. Darling and Wilson G. Smillie, Sao Paulo, Brazil (Journal A. M. A., Feb. 12, 1921), were carried out on a coffee plantation with an unprotected water supply, absence of latrines, colonists living in groups of houses, two families to a house, and from twenty to thirty houses in each colony. The method of study was the one used by Darling, Barber and Hacker, in which a trial treatment is given and all stools are kept, and all worms counted and classified. Ten days later a full 3 c.c. test treatment is given to remove all remaining hookworms, and a comparison of the results of the trial and test treatment is made. It was shown conclusively, that a preliminary purge does not add to the efficiency of the divided 1.5 c.c. dose of chenopodium. To the contrary, there is a slightly diminished efficiency of the treatment. The lowering of efficiency in treatment when the preliminary purge

is employed is still more marked when smaller doses of chenopodium are given in children. A preliminary starvation period is not necessary; on the contrary, the efficiency of the chenopodium is lessened. A small amount of food given coincidently with the drug, when the chenopodium is given in divided doses of 1.5 c.c. greatly diminishes the efficiency of the drug in the treatment of hookworm disease. In the smaller doses of chenopodium that are given children, the decrease in efficiency caused by the factors of preliminary purge, starvation period and food is much more striking than in the full adult dosage of 1.5 c.c.

Behavior of Blood Pressure During Use of Stomach Tube.

Blood pressure readings were taken by C. A. McKinlay, Minneapolis (Journal A. M. A., Feb. 12, 1921), in a series of cases in which stomach lavage was performed as a routine diagnostic and therapeutic procedure. The only selection made was to include cases in which there has hypertension. As a rule, there was an increase in blood pressure of from 20 to 50 mm. of mercury with the passage of the stomach tube. There was a greater increase in those cases in which there was retching. The increase in blood pressure was not dependent on straining or mental excitation. The precentage of increase was greater in cases in which there was hypertension. Cases in which there was hypertension when under the physiologic effects of pilocarpin giving vagus inhibitory action showed an average increase in systolic blood pressure which was less than the increase when pilocarpin had not been given. Similar cases with diminished vagus inhibition following atropin showed no marked variation in the average increase from that noted in cases without atropin.

First Heart Sound and Presystolic Murmur.

Apparently discordant facts concerning the first heart sound and the presystolic murmur are presented by William D. Reid, Boston (Journal A. M. A., Feb. 12, 1921). To term the murmur that is noted in some large hearts without structural change in the mitral valve early systolic rather than presystolic he states is more consistent, in consideration of its intensity and pitch, with a murmur produced by a pressure such as obtains with ventricular systole. It is safer to designate as "presystolic" only such murmurs as are definitely late diastolic in time. The early systolic murmur (sometimes wrongly termed presystolic) occurs in large hearts, and it is suggested that it is produced by an insufficiency of the mitral orifice due to a delay or failure of the muscular contraction in approximating the margins of the opening. The crescendo tone sometimes characterizing the first heart sound may be merely an exaggeration of the normal. Owing to the physiologic tendency of the heart to dilate somewhat as the primary effect of exercise or excitement, it is suggested that a murmur occurring in early systole may sometimes be obtained in the normal heart after exercise of excitement.

Hospitals and Sanatoriums

John Q. Myers, M. D., Department Editor

The third annual meeting of the North Carolina Hospital Association was held at Pinehurst, North Carolina, April 26, 1921. A very interesting program was carried out.

The following officers were elected for the ensuing year: President, Dr. John T. Burrus, High Point; first vice-president, Dr. Moir S. Martin, Mount Airy; second vice-president, Dr. B. C. Willis, Rocky Mount; third vice-president, Miss Virginia McKay, Wilmington. Present secretary, Dr. John Q. Myers, Charlotte, to be continued.

Executive Committee: Dr. J. F. Highsmith, Fayetteville; Dr. J. M. Parrott, Kinston; Dr. John W. Long, Greensboro.

Delegates to State Nurses' Association: Dr. J. R. Alexander, Charlotte; Dr. L. B. McBrayer, Sanatorium; Dr. E. T. Dickinson, Wilson; Dr. L. E. Farthing, Wilmington.

Committee to Consider General Nursing Problems to Meet with Similar Committees from Nursing Associations: Dr. J. F. Highsmith, Fayetteville; Dr. J. P. Munroe, Charlotte; Dr. John W. Long, Greensboro; Dr. J. M. Parrott, Kinston.

CLINICAL AND PROFESSIONAL NOTES

J. Allison Hodges, M.D.

The Value of Electric Light in Neuritis and in Infections.

The discussion of this subject is purposely intended not to be theoretical, but eminently practical, for, in our opinion, electric light therapy in these conditions is undervalued, and usually ignored by the general profession.

This may have arisen from ignorance of the physics of different light rays, or from the apparent difficulty of their application, because of the lack of an elaborate outfit or from the fact that this method has been employed mainly in sanatorium practice, where the patients were supposed to be neurotic, and probably receptive to associated suggestive therapeutics.

The result, nevertheless, whatever may have been its cause, has been as unfortunate for the physician as it has been disastrous to the patient, for its non-employment has often negatived or prolonged many a case that might have been benefited or cured, if the element of time had been properly conserved, and nerve and muscle tissue saved from corresponding degeneration.

It is a well known scientific, as well as practical fact, that there is a marked physical difference in the wave lengths of different light rays, and that moreover, the length of waves from heated objects is different from that obtained from light, and that there is also a corresponding difference in depth penetration of these rays, but it is unnecessary to discuss theoretically these differences for our object is to set forth clinical observations and to leave to others the physics of this subject.

Also, in our experience, special or colored light rays have no superior advantages over the common electric light rays, but there is a marked efficiency in these latter over the old method of using surface heat, either dry or moist.

Electric light therapy is applicable and advisable in both neuritis and in infections, but the best results are obtainable in peripheral involvements in both cases. The most notable results that have been obtained by us in neuritic cases were those involving inflammatory conditions of the brachial plexus, and in intercostal and sciatic neuritis.

The method of application is practically the same in all cases, a cabinet or body or limb outfit, if available, being the most desirable, but by no means being absolutely necessary, for any single or multiple electric bulbs arranged under a simple reflector will suffice and will give practically the same results.

These are arranged to focus on the desired area, and the extremity is made immovable and defended from pressure, and in the case of a neuritis, is enveloped in a large moist dressing which has been soaked in an alkaline solution of half an ounce of bicarbonate of soda to a pint of hot water, and in the case of a local infection, a hot boric acid solution being used instead, and the whole is covered with rubber tissue, and the electric light applied continuously day and night, the above-named hot solutions being added to the dressing every three hours, and the dressings changed according to necessity.

In neuritic cases, the electric light application is usually continued for a longer than in local septic cases, and to meet the special indications, clinical judgment must be used, varying according to the case, though in cases of local infection of the extremities, pain will be relieved almost invariably in the first hour of administration, but the septic processes present will, of course, require a longer treatment, with possibly adequate drainage also.

It is unnecessary to detail illustrative cases to illuminate the success of this practice, for the result in numbers of cases has been almost invariably and universally successful.

Personally and recently, in both a local infection and neuritis, involving the third finger of the right hand, and later an ulnar neuritis, improvement was so signal and striking, especially the relief of pain, although three incisions, two of them through the periosteum, had been of no benefit, that I feel that this method should be brought specifically to the attention of practitioners generally.

It would be foreign to the purpose of this paper to discuss other conditions in which, in our experience, this method of treatment has been equally successful, but we cannot forego mentioning briefly its corresponding success in the

treatment of carbuncles, X-ray burns and some joint cases, especially gonorrhoeal knee infections, and certain cases of acute neuralgia.

This method of treatment is not believed to be the only nor the all-sufficient method for treating all cases of neuritis and infections, but it offers the following advantages:

First: It is simple and easily obtained and applied.

Second: It promptly relieves pain, especially in local infections; and

Third: It shortens the period of convalescence by more speedily stimulating and regenerating the tissues involved.

NEUROLOGY.

R. F. Leinbach, M.D., Dept. Editor.

The struggle for survival between host and invading organism which marks the course of any infectious disease is sooner or later terminated, in the majority of cases, by a complete victory for one or the other antagonist, either the death of the host or his recovery, the latter event characterized by the acquisition of an immunity of longer or shorter duration against reinfection with the organism just vanquished. In certain types of infection. e. g. streptococcic, the termination may be recovery with an immunity which is apparent only and not complete, a "peace without victory," as it were. We observe then the chronically infected host, incapable of developing a sterilizing tissue immunity, and thenceforth liable to repeated metastatic assaults from some remaining bacterial stronghold. A resulting asthenia ofttimes then entrains an incapacity for efficiently waging that other intense struggle of life for success and achievement.

Even though a complete recovery be made, there may remain shell swept and devastated areas of specialized tissue whose structural and functional restoration may be long delayed or indeed never accomplished. Notably in the nervous system is this true. Traumas, vascular accidents and infections have familiarized us with the ultimate often irreparable consequences of injury to nerve tissue in its essential and in its integrative functions.

Now that more than two years have passed since the wave of epidemic encephelitis began its sweep, a beginning may be made of cataloging the damage wrought, not in its toll of dead, but in the residual and perhaps permanent scarring of its surviving victims.

From the Mount Sinai Hospital, New York (1) are reported the results of a late survey of 89 accessible survivors of 145 cases of the disease treated at that institution in 1919 and 1920. In some cases the re-examination was made a full two years after the acute illness, and in all cases more than six months had elapsed. That the restoration to a state of health of the 80 per cent who may be expected to escape death in this disease is a slow and uncertain process is well shown by this survey.

Disturbances in psychic functions, emotional instability, insomnia, tremor and irregular involuntary movements appear to be the most common sequelae. More than half of their cases (55 per cent) showed some form of psychic distubances ranging from the milder psychoneuroses up to suicidal impulsions and pronounced intellectual and memory defects. Insomnia they found equally common. Headaches and generalized pains were very common. The cranial nerves showed residual impairment in 64 per cent of cases in such features as weakness of the facial musculature, paresis of an extra ocular muscle, usually the external rectus, inequality of pupils, or disturbed pupillary reactions.

More striking perhaps are the sequential motor phenomena. Sixty-four per cent were classed in this category, the milder manifestations being a fine or coarse tremor perhaps only brought out by motion, the more severe showing as choreiform or clonic movements of face or extremities. Disturbances in muscle tone and reflexes were repeatedly noted. Very significant is their conclusion that 8 per cent of the cases gave evidence of developing a progressive disease of the central nervous system, most commonly of the paralysis agitans type. In this connection it may be recalled that other observers (Archambault 2) have called attention to the simulation by epidemic encephelitis in the convalescent period of other types of chronic disease of the nervous system as multiple sclerosis, etc. Grossman concludes encouragingly

that 90 per cent of convalescing cases may be expected to progress steadily toward full recovery even after two years of residual symptoms. It is apparent, however, that epidemic encephelitis may be expected to furnish its quota to the catalog of semi-invalidism, be it temporary or permanent, following acute diseases of the nervous system.

Reference.

1. Grossman, Archives of Neurology and Psychiatry, May, 1921.
2. Archambault, Archives of Neurology and Psychiatry, November, 1920.

Nurses Corner

Edith M. Redwine, R. N., Dept. Editor

S. C. State Meeting Held at Columbia.

The S. C. State Nurses' Association held its annual meeting April 19-20 at Columbia at the same time and place with the S. C. Medical Association.

The final meeting, the night of April 20, was a conjoint session with the State Medical Association, the State Hospital Association and the State Nurses' Association. The nurses also attended an earlier session of the medical meeting, at which time there was much discussion of the relationship of the nursing profession to the medical profession.

The convention as a whole was very helpful.

Miss Jane Frazer of Columbia was re-elected president for the coming year. Other officers elected are:

Miss May Happard, first vice-president; Miss Psyche Webster of Greenville, second vice-president; Miss Laura Blackburn of Columbia, secretary-treasurer; Miss Frances S. Tricker, re-elected, and counsellors, Mrs. A. B. Dabbs, Miss Mary C. McKenna and Miss Agnes Coogan.

Greenville was selected as the convention city for the fifteenth annual gathering in April, 1922. The association will be the guests of the fifth district at that time.

Miss Mary McKenna of Columbia was elected as a delegate to the national American Nurses' Association convention to be held at Seattle in 1922, with Miss Jane Frazer as an alternate. Miss Alice Commer of Florence was elected as a delegate to the State Federation of Women's Clubs at its next meeting with Miss Psyche Webster of Greenville as an alternate.

Examination for Registration.

The North Carolina State Board of Nurse Examiners will hold its annual meeting in Raleigh June 8, 9 and 10. Headquarters, Yarborough Hotel.

Nurses desiring to obtain license by examination or through reciprocity are requested to send to the secretary for application blanks and return these properly filled out and signed not later than May 24.

Board of Examiners—President, Lois Toomer, R.N., Wilmington; secretary-treasurer, Effie Eleanor Cain, R.N., Salisbury: Mary P. Sexton, R.N., Biltmore; James M. Parrott, M.D., Kinston; J. F. Strosnider, M.D., Goldsboro.

N. C. Completely Organized.

New Bern District No. 9 of the North Carolina State Nurses' Association was organized May 4th at New Bern. This district comprises 19 counties and completes the organization in the State of District Associations.

N. C. State Meeting at Wrightsville.

To North Carolina Nurses:

We are rapidly nearing the time for our annual meeting, which will be held at Wrightsville Beach, June 14-15-16. It behooves each of us at this time to realize our own individual responsibility relative to the many problems which are confronting us in all sections of our association—private duty, public health, nursing education, etc.

There can be no neutral ground. We must either help or hinder in the advancement of our profession.

If we fail to ally ourselves with the organizations which are formed for the express purpose of upholding the high standards of the founders of the nursing profession, then by our actions we acknowledge the fact that we are against its best interests.

Let us rally round the standard and for the time being lay aside all differences and selfish interests if such there be, working together for good, looking upon our calling not so much as a profession in name only but rather as a call to service of the highest order.

The program for this coming meeting is filled with papers and discussions of

most vital subjects, yet withal, provision is made for utilizing this delightful place for recreation and rest.

TENTATIVE PROGRAM.

Monday, June 13, 8 P. M.

Social Program—Arranged by Wilmington Nurses.

Tuesday, June 14.

10 a. m.—Business session.

2 p. m.—Private duty section.

8 p. m.—Private duty section, P. H. conference.

Miss Hettie Reinhardt, Charlotte, chairman.

Wednesday, June 15.

9-10 a. m.—Advisory council.

10 a. m.—Public health.

2 p. m.—Public health.

8 p. m.—Public health.

Miss Katharine Myers, Raleigh, chairman.

Thursday, June 16.

9 a. m.—Business session.

10 a. m.—League of Nursing Education.

2 p. m.—League of Nursing Education.

8 p. m.—League of Nursing Education.

Miss Edith M. Redwine, Monroe, chairman.

Round Tables—Districts, Presidents, Red Cross, State Committees and others on request.

Mrs. Dorothy Hayden, President.
Miss Carolyn Miller, Secretary.

The N. C. League of Nursing Education.

Thursday, 10:00 A. M.—Business session and roll call.

Members will answer roll call with report of progress of nursing in their community.

Each member is requested to bring training school records, curriculum, charts, trays, baskets, appliances, blanks of various kinds and any item which has helped in standardizing work.

(Please be prepared to demonstrate if called upon).

Doll dressed in the uniform of your hospital.

3:00 P. M.—James Walker Memorial Hospital, Wilmington.

Demonstration—Miss Virginia McKay, Supt. of Hospital, presiding.

Topic—Advantages of Whole Time Instructor Over the Old Method of Teaching Student Nurses:

From the Standpoint of Instructor—Miss Sears.

From the Standpoint of Superintendent—Miss McKay.

From the Standpoint of Student Nurse—Miss Eloise Thompson.

8:30 P. M.—Wrightsville Beach, open meeting, Miss Edith M. Redwine, president of State League of Nursing Education, presiding.

Topic—The Need of Closer Co-operation Between Leagues of Nursing Education, State Nurses' Associations, State Hospital Associations and State Boards of Examiners.

Discussed—From the Standpoint of League of Nursing Education, by Miss Edith M. Redwine, president of League of Nursing Education.

From the Standpoint of Nurses' Association, Mrs. Dorothy Hayden, president of N. C. S. N. A.

From the Standpoint of Hospital Association, Dr. J. T. Burrus, president of N. C. H. A.

From the Standpoint of Board of Examiners, Miss Lois Toomer, president of N. C. Board of Examiners for Trained Nurses.

Address — Miss Jane VanDeVrede, Supervisor Southern Division of American Red Cross, Atlanta, Ga. Title to be supplied.

Officers North Carolina State Nurses' Association.

President—Mrs. Dorothy Hayden, Greensboro.

Secretary—Miss Caroline Miller, Winston.

Treasurer — Miss Jessie McDean, Greensboro.

Standing Committees for 1920-1921.

Ways and Means—Chairman, Miss Birdie Dunn, Raleigh; Miss Blanch Stafford, Winston; Miss Edith Redwine, Monroe; Mrs. Claude Barbee, Raleigh.

Printing—Chairman, Miss Caroline Miller, Winston; Miss Lelia Idol, Winston; Mrs. Dorothy Hayden, Greensboro.

Relief—Chairman, Miss Jessie McLean, Greensboro; Miss Columbia Munds, Wilmington; Miss Fannie Vaughn Andrews, Asheville.

Credential—Chairman, Miss Caroline Miller, Winston; Miss E. A. Kelly, Fay-

etteville; Miss Pearl Weaver, Asheville.

Nominating—Chairman, Miss Cleone Hobbs, Greensboro, N. C.; Miss Mary Laxton, Biltmore; Miss Eugenia Henderson, Winston.

Arrangements—Chairman, Miss Columbia Munds, Wilmington; Miss Lois Toomer; Miss Hatty Lowery.

News Items

The Burke County Medical Society met in regular session at the State Hospital, April 18, for the purpose of electing new officers for the ensuing year and attending to any other business that was necessary. The following officers were elected:

President, Dr. James W. Vernon; Vice President, Dr. Wm. H. Kibler; Secretary-Treasurer, Dr. G. M. Billings.

Dr. Wm. H. Kibler of Morganton was elected delegate to the State Society, Dr. Isaac M. Taylor alternate.

Dr. C. O. Bristow of Morganton was elected a member of the society.

G. M. BILLINGS,
Sec.-Treas.

The Bertie County Medical Society met in regular session April 7, with the Aulander physicians.

The business meeting was called to order by the president, Dr. S. A. Saunders, at 8:00 p. m. After the termination of the business, Dr. L. B. Evans of Windsor read a paper on "Dysentery in Adults," and after same was discussed Dr. W. L. Harris, a very popular pediatrician of Norfolk, Va., read a very interesting paper on "The Digestive Disturbances of Babies, and the Prevention and Control of Same." We felt greatly benefited and honored by having a man of Dr. Harris' ability with us.

Upon adjournment we retired to the residence of Dr. Saunders, where we were served very appetizingly by Mrs. Saunders, Mrs. Benthall and Mrs. Mitchell, who showed that they were better versed in serving physicians than we were in treating babies.

After extending a vote of thanks to the Aulander physicians and Dr. Harris we went home with a good taste in our mouths, new treatments in our heads and hoping the next meeting would soon come.

F. H. Garris,
Sec. and Treas.

Dr. Clifton M. Miller and Dr. W. L. Mason announce the removal of their office to Stuart Circle Hospital, Richmond, Va.

Deaths.

At the recent meeting of the N. C. Medical Society the Obituary Committee reported the names of nine North Carolina doctors who have died during the past year:

Dr. A. F. Jones, Cameron.
Dr. W. P. Swett, Southern Pines.
Dr. A. P. Dickson, Raeford.
Dr. J. I. Rieves, Greensboro.
Dr. Frank Thigpen, Hookerton.
Dr. A. S. Harrison, Enfield.
Dr. Geo. T. Thomas, Wilmington.
Dr. Banks Withers, Mooresville.
Dr. Rufus J. Teague, Roxboro.

Location Wanted.

I am looking for a suitable location for country practice, where the climate is mild and the roads good. Would buy property and established practice.

A. R. Gray, M.D.,
Care Sou. Med. and Surgery.

SECRETARY'S NOTES OF THE SEMI-ANNUAL MEETING OF THE TENTH DISTRICT MEDICAL SOCIETY OF N. C., AT CANTON, N. C., APRIL 12, 1921.

The semi-annual meeting of the Tenth District Medical Society convened at Canton, N. C., April 12, 1921, at 2:30 P. M., in the Y. M. C. A. Building of that city.

Dr. F. L. Siler, president, called the society to order and directed that the minutes of the previous meeting be read, after which, no corrections offered, they stood approved.

The society was warmly and cordially welcomed by Mr. Osborne, editor of the Canton Enterprise and president of the Canton Chamber of Commerce. He assured us that Canton was unlocked and the key thrown away and that we were at liberty to roam at will and enjoy the hospitality which was in store for the members of this society. He paid a beautiful tribute to the physician and narrated many of the hardships and deprivations he suffers to serve humanity, in healing the sick and relieving the suffering.

This welcome was very ably responded to by our genial friend and fluent speaker, Dr. C. E. Cotton, in a few beautiful and well selected sentences, accepting whole-heartedly and with great pleasure this sincere and friendly welcome.

The program for the session was now taken up and Dr. B. R. Smith reported a case of leukemia treated with the combined use of roentgen-rays and the arsenical preparations (sodium cacodylate and salvarsan). This case improved rapidly to the gratification of both patient and physicians, and at last writing, he is feeling fine and apparently well. The second case was that of chronic malarial infection treated with quiniae hypodermically, this case also had a happy and satisfactory ending. Dr. Smith also gave us a very interesting lecture on the indications for the basic metabolism determinations and its diagnostic value, exhibiting the Benedict apparatus and explaining the technic in its use.

Dr. Guy S. Kirby, of Marion, then presented a paper with the title: "Recent Medical Legislation." After paying his respects to the unfairness to the private physician of the manner in which the tonsil clinics are conducted, he proceeds to point out an unfair and discriminatory clause in the Bellamy Act recently enacted, regarding the examination of applicants for marriage license. This bill provides that all health officers other than whole time health officers are to make these examinations without charge. After much heated discussion indulged in by a goodly number of the members present, the following motion was offered by Dr. Eug. B. Glenn: "I move that this society go on record as opposing that part of the law forcing part time health officers to examine applicants for health certificates to obtain license to marry, free of charge." Carried.

Dr. Elias moved that a committee of three be appointed, consisting of one G. U. man, one part time health officer, and one other, who shall report tonight a plan to make practical and safe the venereal examination for license to marry. On this committee, the president appointed Drs. L. W. Elias, W. L. Grantham and C. Z. Candler, who presented the following resolution, which was adopted:

"Resolved, That a committee be appointed to urge the Legislative committee of the State Medical Society to formulate a practical and efficient physical examination for applicants to marry, and see to getting the State Legislature to incorporate this as an interpretation of its present law. To see that the part time health officer is paid for making these examinations a minimum fee of $5.00, and that the county pay for same, not county and State."

The president appointed the following committee to carry this message to the Legislative committee at Pinehurst, which meets in June, 1921, Dr. Eug. B. Glenn, P. R. Bennett and L. W. Elias.

"The Role of the Prostate and Seminal Vesicles in Toxemia and Focal Infections" was the title of a paper given by Dr. W. L. Grantham. He reported four cases to further emphasize the point that we must not overlook the possibility of the etiological factor of many obscure conditions found in the past history of venereal diseases. He also gave us in a lucid manner his technic in G. U. examinations. This paper was ably discussed by Dr. Suggett and others.

At 5:30 the society adjourned to the dining room, where a sumptuous repast had been furnished by the local profession and prepared by the good ladies of the city. The guests enjoyed to the fullest, satisfying the inner man, listening to the sweet strains of music furnished by the orchestra, after which the society was conducted through the extensive plant of the Champion Fibre Company, commencing where the wood is peeled and winding up where it is turned out paper.

Promptly at the sound of the gavel at 7:30 p. m., the president announced that the society would come to order.

Dr. MacRae spoke of the applicability of X-ray to the treatment of disease as well as a very valuable diagnostic instrument. This paper was freely discussed by Drs. Calloway, Cotton, Edwards, Whittington, Elias, Briggs, Griffith, Suggett and Glenn, and the discussion was closed by Dr. MacRae.

Dr. F. W. Griffith gave an interesting paper on Goiter.

Dr. C. P. Edwards read a paper on "Focal Infections of Tonsils and Adenoids and Nasal Accessory Sinuses."

This interesting paper was discussed by Drs. Briggs and Calloway; closed by Dr. Edwards.

At this point a committee was appointed consisting of Drs. Cotton, Abel and Kirby, to draft suitable resolutions of thanks and appreciation for our delightful entertainment. The resolution follows:

"Whereas, the Tenth District Medical Society has been so royally entertained by the local profession, ladies and citizens and the Champion Fibre Company, of Canton; now, therefore, be it resolved that we extend our warmest and most heartfelt appreciation and thanks for the generous reception and hospitable entertainment tendered us."

Dr. Elias then read a paper, "Some Pediatric Points in Diagnosis and Treatment." Discussion opened by Dr. Bennett followed by Drs. Harrison and Hunnicutt. Paper was closed by Dr. Elias.

Dr. Eug. B. Glenn reported a case of Foreign Bodies (Needles and Pins) in Abdominal Cavity. These foreign bodies were not suspected, there having been no X-ray pictures made. This paper was discussed by Drs. Griffin, Briggs and Whittington, and closed by Dr. Glenn.

Dr. Briggs gave a paper, "Removal Foreign Bodies in the Trachea and Esophagus" with report of several cases, exhibiting X-ray plates and instruments with which they were removed. This paper enjoyed a free and liberal discussion.

The program for the session being completed, the society was extended a pressing invitation to meet in October in the town of Murphy, N. C., the society voting unanimously to accept the invitation. No further business, the society adjourned.

Roster of Those in Attendance.

A. E. Knoefel, Black Mountain, N. C
J. W. Huston, Asheville, N. C.
C. V. Reynolds, Asheville, N. C.
W. L. Grantham, Asheville, N. C.
R. C. Sample, Hendersonville, N. C.
Guy E. Dixon, Hendersonville, N. C.
W. P. Whittington, Asheville, N. C.
William Ray Griffin, Asheville, N. C.
A. W. Calloway, Asheville, N. C.
Sam L. Stringfield, Waynesville, N. C.
H. H. Harrison, Asheville, N. C.
John D. MacRae, Asheville, N. C.
George Alexander, Asheville, N. C.
Otto E. Stockinger, Asheville, N. C.
F. M. Davis, Canton, N. C.
J. E. Wilson, Canton, N. C.
W. C. Johnson, Canton, N. C.
S. C. Heighway, Murphy, N. C.
J. F. Abel, Waynesville, N. C.
J. Howell Way, Waynesville, N. C.
R. G. Buckner, Asheville, N. C.
W. L. McFayden, Waynesville, N. C.
J. R. McCracken, Waynesville, N. C.
J. L. Stringfield, Waynesville, N. C.
J. M. Russell, Canton, N. C.
D. W. Harris, Asheville, N. C.
F. Webb Griffith, Asheville, N. C.
Gailliard S. Tennent, Asheville, N. C.
K. E. Montgomery, Waynesville, N. C.
B. O. Edwards, Asheville, N. C.
W. H. Scruggs, Asheville, N. C.
H. H. Briggs, Asheville, N. C.
C. Z. Candler, Sylva, N. C.
D. D. Hooper, Sylva, N. C.
W. B. Adams, Murphy, N. C.
J. N. Hill, Murphy, N. C.
P. R. Bennett, Bryson City, N. C.
C. V. Orr, Andrews, N. C.
Grover Wilkes, Sylva, N. C.
Guy S. Kirby, Marion, N. C.
F. L. Siler, Franklin, N. C.
Eug. B. Glenn, Asheville, N. C.
C. P. Edwards, Asheville, N. C.
O'Legrand Suggett, Asheville, N. C.
W. C. Brownson, Asheville, N. C.
B. R. Smith, Asheville, N. C.
J. E. Tidwell, Andrews, N. C.
T. F. Reynolds, Canton, N. C.
A. C. McCall.
W. J. Hunnicutt, Asheville, N. C.

Fred L. Siler, President.
W. J. Hunnicutt, Secretary.

Eug. B. Glenn, Councilor 10th District.

DELAYED, DILATED AND INFECTED URACHUS.

(A Clinical Report)

Dr. H. S. Lott, Winston, N. C.

This is a case that I am watching, and I will be glad to have you watch it with me. The patient is a woman about twenty-eight years of age, and in excellent condition, so far as nutrition and general appearances go. She is the mother of three children; one single and a fine pair of twins, having gone each time to full term. In addition to this, in the course of her married life, is a history of one or two miscarriages. Her labors, and each puerperium, have nothing significant in their history. The twins are about two years old, and soon after their birth an "abscess" pointed, and discharged pus freely,

about mid-way between the symphysis-pubis and the umbilicus; just about the fundus of the bladder, and also at the point of attachment of the urachus to this reservoir. Some time later, after the first opening had closed entirely, a second "bulging" of structures appeared at the navel, which opened and discharged pus very freely. This was some months ago, and the discharge, in a materially lessened amount, continues; such persistence being the cause of my invitation to visit the patient with her attending physician. At this time the discharge is very slight, and there is no evidence of inflammation of the navel. Passing the palmer surfaces of the hands over the lower abdomen and pelvis, on either side of the median line, an ill-defined sense of resistance is felt, suggesting, at least, some infiltration, or other involvement of omentum, or perhaps structures of greater importance within. In addition to these physical signs, the account given by the patient and her family, of the care of the "abscess" and its discharge, is both suggestive and convincing, as to the original focus of the trouble. They state that the tumor-like feel through the abdominal wall has a "come and go" about it, being at times quite noticeable, and at others almost disappearing. Being told to keep the discharging navel and surrounding surfaces "clean," hydrogen peroxide was used, and found, unmistakably, thrown off with both bladder and bowel content. And the same account was given of any medicated wash that was used. These facts, together with the statement that a "pulling sensation" was evident, and distressing, in all save the prone position, led me to the belief that the urachus was the cause of the trouble.

Having arrived at this conclusion, "what should be done for the patient," was the next question confronting me. With normal temperature, no chills, no sweats and the probability of a pregnancy of about two months advance, the problem presented some complex features, and it is for help in the solution of these that I am telling you about the case tonight. My advice in the matter was to watch her closely, bringing posture and cleanliness to our aid in the accomplishment of drainage; and, in the event of symptoms such as chills, with a rise of temperature, increased evidence of intra-abdominal infiltration, as indicated by palpation, suggesting constrictions in the pus focus, with retention of infective material; then the case would become a surgical one and a median incision should be made, even at the risk of interrupting the pregnancy, thus establishing drainage, and if consistent with vitality and conditions in contiguous structures, effecting the entire removal of the offending urachus. Please tell me if my decisions have been wise and it will give me pleasure to report any further developments in the case.

(Clinical report. Presented at May Meeting of the Forsyth County Medical Society.)

GEORGE GILLETT THOMAS.

Mr. President and Gentlemen:

I am conscious that no words of mine can add further testimonial to the life and character of our deceased friend, yet I feel constrained to express a brief personal tribute to him whom I honored in life and whom we now mourn in death.

George Gillett Thomas was neither a common man nor an ordinary doctor. Coursing in his veins was the rich inheritance of a noble ancestry and imbibing from his illustrious father not only traits of disposition and character, his contact and association with him wielded that silent influence which converted him to the faith of his high calling and chosen profession.

In whatever field of activity he might have cast his lot he would have achieved a successful career, for he possessed to an imminent degree the very elements of character so essential to manly achievement.

Like the sturdy oak above the fog and mist of the commonplace he stood a living exponent of highest ideals, expressing in his striking personality that cultured aristocracy of mind which gave him prestige and leadership among men.

Every gift of honor within the society was bestowed upon him, not by design or intrigue or accident, but as a meritorious compliment of his fitness and a just sense of appreciation of his valued service to his society.

He was not without his faults, but his virtues like the clustering galaxy of many stars shone so resplendently as to illuminate the very footpaths of

every assembly in which he moved.

He was the soul of honor, he betrayed no trust, he made no compromise with truth, he was faithful to his friends, generous towards his enemies and true to himself. He lived a useful life, bristling with activity, energy and purpose, and ceased his pilgrimage at the foot of the hill surrounded with the halo of sunset's glow and glorified with the vision beyond the dark, of that rest vouchsafed to the faithful, eternal in the heavens.

He is gone but not forgotten. He is dead yet shall he live again.

"There is no death,
What seems so is transition;
This life of mortal breath
Is but a suburb, of the life elysian
Which we call death."

E. G. MOORE.

Elm City, N. C.

BEALMONT PARK SANATORIUM

Dr. Louis G. Beall, Black Mountain, N. C., announces the opening on May 1 of Beallmont Park Sanatorium for the treatment of nervous diseases including selected cases of drug habitues and alcoholics.

The institution is situated on the Asheville-Montreat Road, near Black Mountain, North Carolina. Diet, rest, exercise and other natural curative agencies. A complete Hydrotherapeutic Department now being installed. No tubercular or insane cases received.

The fly I hate with all my heart,
Because he played a dreadful part;
I have not walked in near five years,
Which caused by mother lots of tears.

The fly is guilty, so they say,
Paralysis he brought my way;
So swat the fly, for goodness' sake,
So no more cripples he will make.

For the past five years Anna has been a cripple, because of infantile paralysis, with which she was infected by a fly. In her pathetic little poem she told of this misfortune and urged others to beware of flies, lest they too become afflicted.

The continued presence of flies in the home is a positive index that the housewife is careless and uncleanly in the management of the household, and that a hidden abode is maintained for the fly family.

Today at the circus I saw the wild animals in cages with a guard on duty at each, so that the animals would not harm any one. Still there were several flies about and no one paid any attention to them. Yet these little flies could cause greater harm than the animals because the flies carry disease germs on their legs and on their bodies.

If the fly hurt us when he left germs every one would fight to get rid of the pest; for he is a pest and often causes epidemics by carrying germs.

Putting screens in the windows or swatting the flies is not enough; we must get rid of their breeding place. Always keep the garbage pail covered, and never, never spit on the floor or in the street. Above all, never buy food from a merchant who breaks the law by not keeping the food covered, and in this way inviting the fly to feast on it and leave germs which he has just carried from the gutter. Do not eat in a restaurant where flies crawl about on the food. Swat each fly that comes along now, for it may mean many thousands less in the summer. So swat the fly and—

Remember, swatters are cheaper than
doctors' bills,
Baby's sickness, or bitter pills.

"What a nuisance flies are!" growled daddy as he brushed away several flies that were deliberately sitting on his bald spot. In despair, he put on his old hat, and finished the rest of his meal in peace.

Flies, however, are more than a nuisance. They are a real danger to life. One probably would realize the danger if he were told that he might die of a disease caused by germs carried to him by flies. He certainly would swat the fly then.

But, alas, swatting the fly alone will not do. It is like swatting a mosquito when a swamp is near by. Remove the swamp and you remove the mosquitoes. In like manner, remove the breeding places of flies, and you will destroy the origin of flies. Keep back yards and stables free from garbage and manure.

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Keep garbage pails covered. Wash the floors, walls and tables of the kitchen, pantry and dining-room clean from food. Screen all windows and doors. Keep fly papers and flytraps. Then, if in spite of all these measures a lonely fly decides to sit on daddy's bald spot swat the fly.

Some of the conditions under which flies breed:

Refuse from stables forms the chief substance in which flies deposit their eggs, and heaps of such material are the principal breeding places of these insects. They also breed on the occurrence of a suitable temperature in ashes, cow and fowl refuse, cesspools, straw and textile fabrics, such as woolen garments and sacking which have been fouled with material of human origin, mushrooms, decaying vegetables, fruits and foodstuffs, such as potato skins, melons, bananas, pears, apricots, cherries, plums, peaches, bread and milk, boiled eggs, bad meat, and rotting grain, such as wheat. They are also found in spittoons.

Clean up and prevent the deadly pest from breeding! Kill flies and save lives!

The filthy fly, the dangerous fly, oh,
how I do detest it.
You see him leave the garbage heap
and, with the filth infested,
Fly through the open window, and also
through the door,
And leave his germs upon our food; gee,
that does make me sore.

If everybody felt like me I'm sure they'd
not be pestered,
But get right after them, you bet, as
Mr. Hatch suggested;
The doors and windows would be screened,
the garbage pail left covered,
And the way to sleep, in health and
peace, at last would be discovered.

Southern Medicine and Surgery

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MINUTES OF SPARTANBURG TRI-STATE MEETING.

(Continued from May Issue)

Election of Officers.

President.

Dr. N. B. Edgerton:

There is a man whom I would like to put in nomination for president of the Tri-State Association, a man who would bring considerable lustre to this chair, a man who is known probably throughout these United States, certainly in all the larger medical centers, a man who is first known in the State of South Carolina for his very energetic ambitions, a man who has done a great work throughout the State of South Carolina, a man whom I believe would devote a great part of his time to putting across a great meeting next year. The man who I would like to place in nomination is Dr. W. W. Fennell of Rock Hill, a man than whom there is none better.

By Dr. Edwin M. Mann, Kenbridge, Va.

I second that nomination.

Dr. MacIntosh.

At the requst of many South Carolina members of this Association, I desire to place in nomination Dr. H. R. Black of Spartanburg, S. C. I feel sure that the older members of this Association will know Dr. Black very thoroughly as a man who has been very regular in his attendance and as an energetic hard working man. I feel that the Association cannot do better than place itself in the guidance of Dr. Black.

Dr. Black's nomination seconded.

By Dr. Hodges, Richmond, Va.

As a representative of Virginia, also of North Carolina and as very close kin to South Carolina, I want most heartily to second the nomination of Dr. W. W. Fennell of Rock Hill. I want to say, gentlemen, I think I have attended every meeting of this Association, almost, and every time Dr. Fennell has been present and he has been willing to bear the burden of any responsibility placed upon him. He is a man that has always been honored and will always be honored. Dr. Fennell, as you all know, is a member of the American Surgical Association, a member of the trustees of the University of South Carolina; he is a gentleman that has his own hospital and has done a great deal of scientific work; he is a man that stands for the highest and best in the profession; he is a man that is strong physically and mentally and yet he is as modest, as gentle and as engaging as a woman. He is always loyal to this Association and has always done his work with a great degree of success. I believe his election to this position would be a great honor to this Society and I trust and believe that the profession would honor itself in honoring him.

Nominations for president closed.

Dr. Black received 25 votes and Dr. Fennell receiving 84, was declared elected.

Vice-Presidents.

By a Member:

I place in nomination for first vice-president for the State of Virginia, Dr. Karl S. Blackwell, of Richmond, Va.

There being no other nominations, the secretary was instructed to cast the unanimous ballot of the Association for Dr. Karl S. Blackwell, of Richmond, Va., as vice-president for the State of Virginia.

By a Member:

I rise to place in nomination for vice-president a man whom it is an honor to this Association to have, a man that is interested in hospitals, a man that is interested in surgery, a man that is interested in all branches of medicine; I place in nomination Dr. J. T. Burrus, of High Point, N. C.

Nominations closed and the secretary cast the unanimous ballot of the Association for Dr. J. T. Burrus as vice-president for North Carolina.

By Dr. Edgerton:

I would like to nominate Dr. Black for vice-president.

Moved, seconded and carried that the secretary cast the unanimous ballot of the Association for Dr. Black as vice-president for South Carolina.

Secretary-Treasurer.

Dr. R. E. Hughes, Laurens, S. C.:

I move that Dr. James K. Hall succeed himself as secretary-treasurer of this Association.

By a Member:

I move that we give a standing vote of thanks to Dr. Hall for his services to this Association during the past year.

Motion carried and the members stand.

By the President:

There are three new members of the Executive Council and the Executive Council has nominated them. Will Dr. Hall please read the nominations.

By the Secretary:

It is customary for the Executive Council itself to fill in vacancies occurring in the council. Last night the following nominations were made by the Executive Council, which, with your pleasure I shall read to you. You will notice on the program that the terms of the following gentlemen as members of the Executive Council expire with this session: Dr. F. M. Hanes for North Carolina, from Winston-Salem, N. C., and Dr. Matt. O. Burke, from Richmond, Va.; Dr. F. H. McLeod, from South Carolina; Dr. James K. Hall, from Richmond, Va. Dr. Hall is already trying to fill one office in the Association and has resigned as a member of the Executive Council and in his place the council proposed the name of Dr. F. C. Rinker, of Norfolk, Va., and the following gentlemen for the three-years term: Dr. Charles O'H. Laughinhouse, Greenville, for North Carolina; Dr. D. L. Smith, Spartanburg, for South Carolina; Dr. Jos. T. McKinney, Roanoke, Va., for Virginia.

By a Member:

I second those nominations.

Motion carried and so ordered.

Invitations for the Meeting Next Year.

By the President:

We have a very cordial invitation from the profession of Norfolk to meet with them next year; and the Executive Council recommends, with your approval, that we accept their invitation.

By a Member:

I move that the nominations be closed.

Motion seconded, carried and so ordered.

Thursday, February 17th, 2:30 P. M.
Afternoon Session.

By the President:

I will ask the secretary to make the report of the Executive Council.

By the Secretary:

The Executive Council recommends that the resolution of Dr. White, with reference to the program, be referred back to the full meeting with the distinct disapproval of the Executive Council.

Dr. Way's resolution looking to the care of disabled officers was adopted.

Upon motion of Dr. D. L. Smith, upon the request of Dr. Cornell, the Tri-State Medical Association requests the State Boards of Health for each of the three States to make mandatory the placarding of summer diarrhoea in children from April 10th to November 1st.

Upon motion of Dr. Southgate Leigh the resolution was adopted to empower the president of this Association to appoint a committee of three from each State, to be known as the Committee of Cancer Research, whose duty shall be to report to this Association at each annual meeting and to co-operate with other like existing committees in the United States.

By the President:

As I understand it, the report of the secretary is that the Executive Council recommends the adoption of those things he has mentioned and recommends the non-adoption of Dr. White's resolution. Suppose we take up Dr. Cornell's resolution first.

The motion made at the request of Dr. Cornell that infantile summer diarrhoea in children be made reportable by the State Boards of Health, seconded and carried.

The motion made by Dr. Way, looking to the care by the Federal Government of disabled medical officers, seconded and carried.

By Dr. J. W. White:

In regard to my resolution looking to the abbreviation of papers read before

this Society, I desire to renew my motion and move its adoption in spite of the disapproval of the Executive Council.

By Dr. B. R. Tucker:

I would like to second the motion to adopt all three of Dr. White's resolutions. We are on yesterday afternoon's program yet, although we split the sections and in a session of this kind we would all like to hear the surgical and medical papers. I think we could get better papers and better attendance. I hope this Association will adopt this in spite of the disapproval of our very excellent council.

Dr. Southgate Leigh:

We have very little time and I hate to take it up; but there is no man in this Association that knows better than I the job the secretary has. The secretary has done a wonderful work down here and the secretary will tell you that if this motion is passed, it will not only undo what he has already done but will prevent his doing good work in the Association next year. This is a democratic organization. Every man ought to read the paper he wants to. We can divide the meeting up into as many sections as we wish. We don't want to have any drastic rules. The Association has been at a low ebb; it is now on the high road to prosperity. We need money and we need members. Don't let us take steps backwards. We hold the very deepest respect for Dr. White but Dr. Hall knows this motion will practically break up the Society.

Dr. Tom Williams:

I was going to ask Dr. White to accept an amendment to the third part of his resolution; that unless the writer of the paper sends his paper to be read if he is prevented from coming—there might be a man who would put his name down on the program with the intention not to come and would not take the trouble to write a paper; but if he has written a paper, indicating to the Association his good faith, and was prevented from coming by unavoidable reasons, his paper need not be read except by title. The Virginia Medical Association permits only five papers at each session. That is ten papers per day. Dr. White's resolution will permit twenty papers per day and even that will be very difficult to get through with. It is quite impossible to get through a program of this size and attend to all the business of the Association. We can't judge the affairs of the Society by the number of papers put down on the program; we must judge it by the number of papers read and fully discussed and the way in which they are grouped, handling some central theme. I believe we can much better deal with forty papers than we can deal with eighty or a hundred papers, as the present arrangement has been.

By Dr. J. A. White:

I accept the amendment.

Dr. Tucker:

The motion is before the house.

The original motion of Dr. White's carried.

Dr. J. E. S. Davidson, Charlotte, N. C.

Before we adjourn, I desire to move that Dr. L. F. Barker of Baltimore and Dr. Wm. Sharpe of New York be elected honorary members of this Association.

Motion seconded, put and carried.

By the President:

I appoint Dr. Southgate Leigh and Dr. A. J. Crowell to escort the president-elect, Dr. W. W. Fennell, to the chair:

By Dr. Fennell:

You know, gentlemen, I am no speech maker; but I assure you from the bottom of my heart that I appreciate the honor you have conferred upon me. It is indeed an honor to be elected president of this Association of representative doctors that make up the Tri-State Association. Of course I want to ask each and every member to help me make the next year's meeting the best in the history of the Tri-State Association, an Association that I love so well.

We have seven or eight papers to finish up on the program on the surgical side and if there is no further business I think we had better go across to the other hall and continue our program.

By Dr. J. P. Munroe:

The secretary has handed me a telegram which he wishes me to read:

"Birmingham, Ala.,
"February 17th, 1921.

"Tri-State Medical Association, in convention assembled, Auditorium Hotel Cleveland, Spartanburg, S. C.

"Greetings:

"We hope you are having a great meeting.

"SOUTHERN MEDICAL ASSOCIATION.

"Seale Harris, Sec."

THE EFFECT OF PITUITARY EXTRACT ON THE RATE OF URINE FORMATION IN MAN.*

R. McBrayer, A.B., M.D.,

Clinician and Director of Laboratorries, North Carolina Sanatorium for the Treatment of Tuberculosis, Sanatorium, N. C.

It was at the suggestion of my former professor, Dr. A. N. Richards, who holds the chair of pharmacology and pharmaco-dynamics in the Medical School of the University of Pennsylvania, that this study was undertaken. Too, the infectious enthusiasm, kind encouragement and stimulating influence of Dr. Wm. deB. MacNider, Professor of Pharmacology, University of North Carolina Medical School, have valuably aided me during this investigation. Therefore, to these two men, as well as to my father, Dr. L. B. McBrayer, who ably and tirelessly assisted me in the actual work, I am deeply indebted.

Before taking up the actual work of which this paper is the subject, let us briefly review the current teaching of the pharmacology of pituitary extract. Here we may state that the preparation used in this study is the obstetrical pituitrin made by Parke, Davis and Company, who, in a recent personal communication, state that this product is a quantitatively standardized aqueous extract of the infundibular portion of the pituitary gland, and that obstetrical pituitrin is just one-half as concentrated as surgical pituitrin. This product was used because we believe with Rowntree (1) that for such studies it is probably the best preparation available.

The manufacturers' statements concerning the pharmacologic action of this preparation agree with the statement in that admitted authority, Cushny's Text Book, "Pharmacology and Therapeutics or the Action of Drugs," which says that when injected intravenously, the blood pressure rises": that this "rise in pressure is due to the constriction of the peripheral arterioles, as is shown by the lessened volume of the organs." He concludes that, "the pituitary substance must act directly on the muscle fiber" because this action is not interfered with by severing the vasoconstrictor nerves or by paralyzing the myoneural junctions with ergotoxin. However, this constrictor action on the arterioles seems not to be without exception for the same writer finds that "one of the earlier observations was that pituitary injection was followed by a profuse secretion of urine, generally accompanied by dilatation of the renal vessels and an increase in the volume of the kidney," though there is some conflicting evidence to prove that this is the complete modus operandi in the diuresis. Cushny's statements are arrived at by reasoning from analogy in that they are mainly based on animal experimentation. Norris states practically the same thing in the 3rd edition of his "Blood Pressure and Its Clinical Applications": "It (pituitary extract) also has a diuretic effect due to direct stimulation of the renal cells, usually aided probably by a concomitant vasodilatation, because there is no constant relation between pituitrin diuresis and either systolic or pulse pressure or the ratio between them."

Realizing that a text book can hardly be out of the hands of the printer before subsequent studies have antiquated parts of it, we communicated with fifteen of the best medical schools in the States, requesting the professors of pharmacology to give us their current teaching on the pharmacologic action of pituitary extract with reference to urine formation. To date Columbia University, Johns Hopkins, University of Michigan, University of Virginia, Washington University, Yale University, Cornell University, University of Chicago, Tulane University, University of North Carolina and the University of Pennsylvania have replied.

To crystallize their replies, it would be this:

The subject is yet too undeveloped to permit of dogmatic teaching, however, we superficially mention its diuretic effect, using Cushny's Text Book as the basis for this teaching, or, as a few did, entirely avoid answering the question.

MacNider, above referred to, and than whom there is no greater authority on the kidney, considers, in a personal communication to us based on unpublished experiments, that "the rise in systemic blood pressure which follows the

*Read before the Tri-State Medical Association, Spartanburg, S. C., Feb. 16-17-18, 1921.

use of pituitary extract and the associated vasodilation of the renal vessels is not the essential elements in pituitary diureses. The rise in systemic pressure and the renal vasodilation favor diuresis from pituitary extract but if the renal epithelium be injured by an anesthetic or by Uranium Nitrate no diuretic effect is obtained from pituitary extract even though the general and local circulation is favorably influenced for diuresis. The primary and essential element in pituitary diuresis is its ability to stimulate renal epithelium."

Certainly you will agree that the current and generalized teaching on this subject is that pituitary extract is a diuretic for man, though in 1915 Konschegg and Schucter (2) reported that, in normal persons, the volume output of fluid and solids could be lessened for sixteen hours by the subcutaneous injection of one to two c.c. of pituitary extract.

Our study was undertaken in the following manner. The seven subjects were patients in the North Carolina Sanatorium, undergoing treatment for active pulmonary tuberculosis. In a warm room, free from noise, interruptions, and drafts, each of the seven ambulatory males was singly placed at complete and comfortable rest in a semi-sitting posture on a standard recliner. His position and clothes were adjusted for subsequent catheterization to the point that this operation did not require a single movement on his part. After the subject had rested for fifteen minutes the 5½-inch cuff of the Faught Mercury Sphygmomanometer was applied to his right arm and the systolic and diastolic blood pressure and the pulse rate (counted in half minutes) were recorded at regular intervals—usually two minutes—until it appeared that each had reached a constant level or rate. This required about 25 minutes. The subject was now catheterized with a soft, medium sized, rubber catheter. This was done with the minimum of confusion, noise and movement on the operator's part and with the least possible discomfort to the patient. When the bladder had been emptied and a constant dropping of urine from the catheter had been established, the amount of urine flow per unit of time (usually two minutes) was measured. This, in our opinion, was taking the urine from the bladder at the rate at which it flowed into the bladder from the kidneys. Along with this measured urine flow, the systolic and diastolic blood pressure, and the pulse rate were taken and recorded as detailed above. The four readings were regularly continued until each became practically constant, which required about 35 minutes. One cubic centimeter of pituitrin was now given subcutaneously in the left deltoid region. This was done with the least possible disturbance to the patient, blood pressure cuff and catheter. Immediately the readings of the systolic and diastolic blood pressure, the pulse rate, and amount of urine flow per unit of time were regularly continued and recorded. This procedure was usually continued for one hour after the administration of pituitrin.

Now let us take up the results obtained in each case.

Note: The total solid estimations referred to below were obtained by that old and often proved rule (3) which has us multiply the last two figures of the specific gravity by two, the product being the total solid output in milligrams per 1000 c.c. of said urine. We realize that this method is not truly scientific and accurate, nevertheless it was the only available method possible.

Case 2003. E. B. S. Age 26 years. Classification: Far advanced B32. Three urinalyses show: Tubercle Bacilli, W. B. C., (mainly small lymphocytes), pus cells (few). Phenolsulphonephthalein output: 2 hrs., 65%; 3 hrs., 72%. His urine output was studied, as above outlined, for one hour and 18 minutes with the following results: The rate of urine flow averaged 1.25 c.c. per minute for the 14 minutes just preceding the administration of pituitary extract. During the first 32 minutes immediately following the extract, it flowed at the rate of 0.922 c.c. per minute, which is a 21% decrease in output per minute. During the next 32 minutes it flowed at the rate of 0.8 c.c. per minute, which is a 36% decrease. The output of solids during the 14 minutes before the drug was at the rate of 0.05 mgs. per minute; while during the first 32 minutes following the drug the solid output was 0.0396 mgs., or a decrease of 20.8% per minute. The output of solids for the second 32 minutes was at the rate of 0.032 mgs. per minute or a de-

crease of 36%. The specific gravity before the drug, of the specimen, was 1.020, as was the specimen following the drug.

Case 1852. J. W. W. Age 29 years. Classification: incipient, A No. 1. Urinalysis, based on two examinations, showed: a trace of albumen, occasional hyaline and granular casts, specific gravity 1.034. Phenolsulphonephthalein output: 2 hrs., 45%; 3 hrs., 55%. Urine output studied as above for one hour and 21 minutes. Average rate of urine flow during the 20 minutes preceding drug, was 2.3125 c.c. per minute; during the first 31 minutes following the drug, it was 0.9322 c.c. per minute, or a decrease of 60%. During the next 30 minutes the rate of flow was 0.7066 c.c. per minute or a decrease of 60%. No estimation of solids or specific gravity readings were done in this case.

Case 1840. W. S. M. Age 32. Classification: incipient, A No. 1. Two urinalyses showed: Albumen plus; occasional W. B. C. Phenolsulphonephthalein output: 2 hrs., 41%; 3 hrs., 55%. Urine flow was studied, as above, for one hour and 47.5 minutes. During 31 minutes prior to drug, average rate of flow was 0.9677 c.c. per minute. During first 36.5 minutes following administration of drug the average rate was 0.8219 c.c. per minute or a decrease of 17% per minute. During the next 40 minutes, the average rate of flow was 0.75 c.c. per minute, or a decrease of 23%. No estimation of solids or specific gravity readings were made.

Case 2021. E. C. N. Age 22. Classification: Far advanced, B No. 2. Four urinalyses showed only an occasional hyaline cast. Phenolsulphonephthalein output: 2 hrs., 50%; 3 hrs., 64%. Urine flow was studied, as above, for one hour and 20 minutes. During the 26 minutes preceding the administration of the pituitary extract, the average rate of urine flow was 1.195 c.c. per minute. During the first 26 minutes after the drug, the average rate of flow was 0.4615 c.c. per minute or a decrease of 61%. During the next 28 minutes the average rate of flow was 0.2008 c.c. per minute or a decrease of 83%. The output of solids during the 26 minutes before the drug was at the rate of 0.0191 mgs. per minute, while during the 26 minutes following the drug the solid output was at the rate of 0.0016 mgs. per minute or a decrease of 91.62%. During the next 28 minutes it was at the rate of 0.0007 mgs. per minute or a decrease of 96.33%. The specific gravity of the specimen before the drug was 1.008, while it rose to 1.018 in the specimen after the drug. This patient approached syncope for a very few minutes following the administration of the drug.

Case 2027. E. O. E. Age 34 years. Classification: incipient A No. 1. Four urinalyses showed only a few epithelial cells and small amount of mucus. Phenolsulphonephthalein output: 2 hrs., 57%; 3 hrs., 60%. Urine output was studied as above, for one hour and 26 minutes. The rate of urine flow averaged 1.177 c.c. per minute for the 48 minutes preceding the drug. During the first 18 minutes following the drug, the average rate of urine flow was 1.166 c.c. per minute or a decrease of 1%. During the next 20 minutes, the average flow was at the rate of 0.8 c.c. per minute, or a decrease of 31%. The output of solids during the 48 minutes before the drug was at the rate of 0.070 mgs. per minute. The output of solids during the first 18 minutes after the drug was at the rate of 0.072 mgs. per minute or an increase of 2.85%. During the next 20 minutes the output of solids was at the rate of 0.049 mgs. per minute or a decrease of 30%. The Sp. Gr. of the specimen before the drug was 1.030, while it increased to 1.031 in the specimen after the drug.

Case 1902. J. W. R. Age 43 year Classification: Advanced B No. 2. Five urinalyses showed: Albumen plus, occasional hyaline cast, little mucus. Sp. Gr. 1.033. Phenolsulphonephthalein output: 2 hrs, 64%; 3 hrs., 68%. His urine output was studied, as above, for one hour and 36 minutes. The rate of flow during 38 minutes before the drug was at the rate of 1.525 c.c. per minute. During the first 28 minutes following the drug, it was at the rate of 0.98 c.c. per minute, or a decrease of 35%. During the next 30 minutes the rate of flow was 0.73 c.c. per minute, or a decrease of 51%. The output of solids during the 38 minutes before the drug was at the rate of 0.0635 mgs. per minute. During the first 28 minutes after the drug, it was at the rate of 0.049 mgs. per minute, or a decrease of 22.83%. During

the next 30 minutes it was at the rate of 0.0365 mgs. per minute, or a decrease of 42.52%. The Sp. Gr. of the specimen before the drug was 1.021, while after the drug it was 1.025.

Case 2038. A. D. J. Age 30. Classification: Moderately advanced B. No. 2. Four urinalyses showed: occasional epithelial cell. Phenolsulphonephthalein output: 2 hrs., 50%; 3 hrs., 66%. Urine output was studied, as above, for one hour and 26 minutes. The urine flow during 32 minutes before the drug was at the rate of 4.75 c.c. per minute. During the first 26 minutes after the drug it was at the rate of 1.55 c.c. per minute or a decrease of 66%. During the next 28 minutes the flow was at the rate of 1.035 c.c. per minute or a decrease of 75%. The output of solids during the 32 minutes before the drug was at the rate of 0.0617 mgs. per minute. During the 28 minutes following the drug the output of solids was at the rate of 0.0279 mgs. per minute or a decrease of 54.78%. During the next 28 minutes it was at the rate of 0.0186 mgs. per minute or a decrease of 69.87%. The Sp. Gr. of the specimen before the drug was 1.0065, while after the drug it was 1.009.

Realizing that this series of studies is numerically small, however, knowing that the facts were obtained in a very detailed and accurate manner, and furthermore appreciating the utmost consistency in the results, we feel that the following conclusions are warranted:

1. During the first hour following the hypodermic injection of medicinal doses of pituitary extract the urine output is markedly decreased.

2. During the same period of time the total output of urinary solids is markedly decreased, both relatively and actually.

3. During the same period of time there is a marked and constant decrease in the systolic, diastolic, and pulse pressures, and pulse rate which decreases appear definitely related to the decrease in the fluid and solid output of the urine.

Realizing that this decrease in the output of urine and urinary solids might be only a temporary affair, we undertook the study of these two problems in fractional 24-hour specimens. We regret to state that our series of cases is yet too small and the data obtained too inconsistent to permit of my conclusions.

February 12, 1921.

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Discussion.

Dr. N. Bruce Edgerton, Columbia, S. C.

In 1915, Dr. J. H. Taylor referred to me a case whose chief complaint was marked polyuria. The man passed about five quarts of urine in twenty-four hours. He was also troubled with marked thirst. He would wake up several times during the night and drink a pitcher full of water. Dr .Taylor referred him to me, thinking that probably he had some urological condition. The blood Wassermann showed on two occasions a negative reaction, and a one plus reaction after repeating three times. I gave him one dose of Salvarsan; three or four days after the Salvarsan his blood showed a four plus Wassermann. I diagnosed syphilis of the pituitary body. One c.c. of pituitrin in the morning and one c.c. about 7 o'clock in the afternoon would cut down his urine in quantity from five quarts to two quarts. The quality of urine would be changed from a pale limpid watery urine to an amber straw-colored urine.

I gave him iodide of potash as high as 250 grains per day, and about 18 to 20 injections of Salvarsan over a period of about eight months. During the time he was taking the treatment he bought pituitrin wholesale and the pituitrin put under his tongue with a medicine dropper would control his urine fairly well; would cut it down to

about half of the amount he would ordinarily pass, and at the end of about eighteen months the amount of his urine had gotten down to about two quarts per day, and his thirst had diminished so much that it did not bother him.

On account of his flabby musculature he could not take mercury by hypodermic. I did give him mercury rubs and mercury by mouth in conjunction with his other treatment.

The case proves most conclusively that pituitrin has an inhibitory action on the amount of urine secreted.

Dr. R. A. McBrayer, Sanatorium, N. C.

I want to thank Dr. Edgerton for what he said about diabetes insipidus. I want to say, if I am not mistaken, Dr. Edgerton, that the use of pituritrin in diabetes insipidus has been in effect about twelve years. Dr. Edgerton's case, I believe, is the nineteenth case reported in the literature that I have been able to find. I don't know whether Dr. Edgerton can answer the question or not—he implies it—as to why that urine was increased. He inferred that there was a deficit of the pituitary secretion and he made up that deficit which corrected the polyuria. It sounds very feasible; however, the work I have done shows that the decrease of urine output can be partly, at least, accounted for by a vascular change in the kidney other than by supplying the required pituitary extract. We can control it by the use of the injection of pituitrin extract.

I want to thank Dr. MacNider for what he said, and I feel like saying about him the same thing that he said about the secretary of this society. I want to say that this study is meant to cover one hour. What happens in the following hours I have not attempted to say. I don't know. However, I am convinced that there is a decreased urine output following the injection of pituitary extract. After an hour it may be that the blood pressure is going to rise, and that there will be an increase in output—it may be—but I don't know. Dr. MacNider showed an increase after an hour in dogs, which increase was preceded by the same findings in dogs that I have herewith reported in the human.

SOME THEORIES REGARDING THE CAUSE OF OBLIQUE INGUINAL HERNIA AND A SUGGESTION AS TO TECHNIQUE IN OPERATING.

By J. W. Henson, M.D., F.A.C.S.,
Richmond, Va.
Associate Professor of Surgery,
Medical College of Virginia.

For the past three years or more, the writer has been doing plastic work on the transversalis fascia at the internal ring in every herniotomy for oblique inguinal hernia. Pitzman, in an article published in the Journal of Surgery, Gynecology and Obstetrics, March, 1919, advocates narrowing the internal abdominal ring. The writer endorses most emphatically his idea that the internal abdominal ring should be cared for, but is unable to endorse his technique because it does not reconstruct the provisions that normally exist for its protection.

His conclusions regarding hernia are splendid and we will use them as a text for our discussion. They are:

1. "All types of hernia are caused by greater intra-abdominal pressure than the particular wall can withstand."

2. "The newer point of view that the hernia causes the sac in contra-distinction to the sac causing the hernia deserves serious consideration."

He (Pitzman) is disposed to endorse the "newer point of view that the hernia causes the sac." We endorse it with certain exceptions to be presently stated. The idea of the sac antedating and causing oblique inguinal hernia has passed down through so many generations of surgeons that the belief in it has become as fixed as the former be-

*Read before the twenty-third session of the Tri-State Medical Association in Spartanburg, S. C., Feb. 16, 1921.

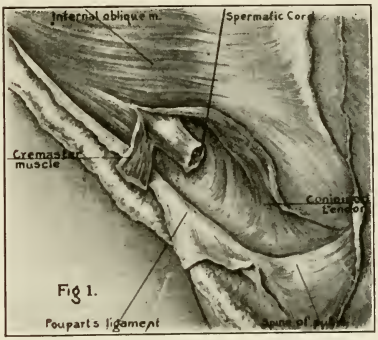
lief in the etiologic relationship of heredity to pulmonary tuberculosis as compared to other etiologic factors.

Practically from the time radical operations for oblique inguinal hernia were first done, on down to the present, there has been in the minds of most surgeons the idea of high ligation of the sac equal in importance to the muscular plastic work and many have considered it of greater importance. Kocher and many others have used ingenious methods of caring for the sac so that it could not play any part in recurrence and yet the final statistics show that the percentages of recurrences have not been influenced by these procedures.

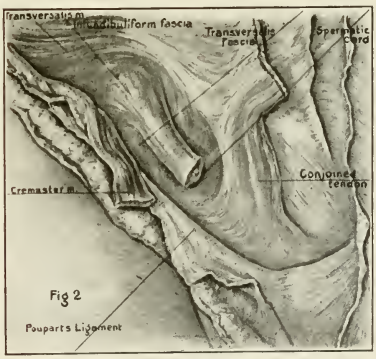
The writer would suggest that Pitzman's conclusion No. 1 read: "All types of hernia are caused by greater intra-abdominal pressure than can be withstood by the weakest point in the abdominal walls."

While an unclosed processus vaginalis would be the weakest point, if present, it is not necessary by any means that an abdomen should possess an unclosed vaginalis in order to have a weakest point in its walls. There are a number of weak points and some of them do not possess in foetal life a process or pouch from the peritoneum which may remain unclosed and play the role of "the sac causing the hernia." Two notable examples of such weak points are the femoral ring and the triangle of Petit. At these points the hernia causes the sac when one occurs. Again in direct inguinal hernia, there has been no pre-existing sac. The writer's views as to the etiology of oblique inguinal hernia are that the sac very seldom antedates and causes the hernia except in childhood; that rarely the hernia may result from an intra-abdominal pressure so excessive as to overcome the normal provisions for protection at the internal abdominal ring; that usually when the hernia occurs, without the presence of the unclosed peritoneal process, it is due to atrophy and relaxation of the internal oblique muscle and relaxation of the transversalis fascia with enlargement of the internal ring and loss of the normal relation between the ring and the muscle, and consequently the loss of the valve-like protection the latter affords the ring.

A discussion of the anatomy of the internal abdominal ring will disclose the reasons for some of the views just expressed What is the internal abdominal ring? Why would it be an especially weak point, if without protection? What affords this protection? Though the transversalis muscle and the deep epigastric artery are among the boun-

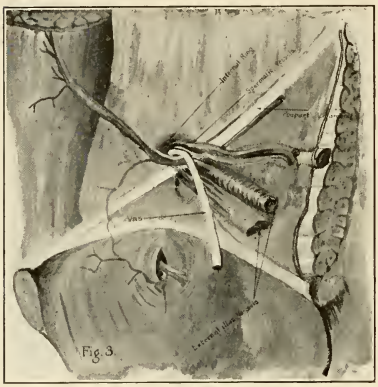


daries (Figs. 2 and 4), they are really not parts of the ring. They are merely landmarks. The internal abdominal ring is referred to in text books as a hole in the transversalis fascia. It is really the upper end of a tube-like process of this fascia which surrounds the structures of the spermatic cord at their exit from the abdomen and in their



course down the inguinal canal (Figs. 2 and 4). This process or tube is funnel-like in shape, much larger at its upper end, the ring, than is necessary to accommodate the structures of the cord, becoming more closely approximated to

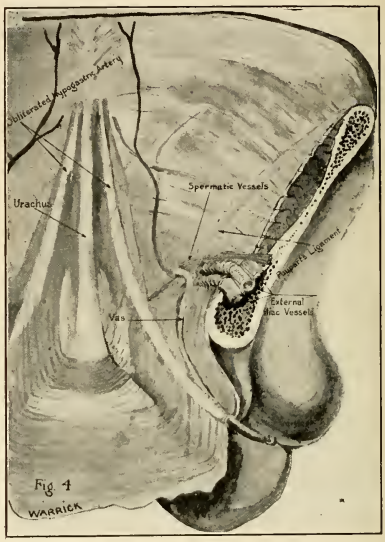
these structures lower down in the canal (Fig. 4). On account of the relatively large size of the internal ring, if this tube ran from the abdomen at an angle to the plane of the ring, everybody would have an oblique inguinal hernia. The lower border of the internal oblique muscle covers the internal ring and the outer third of the inguinal



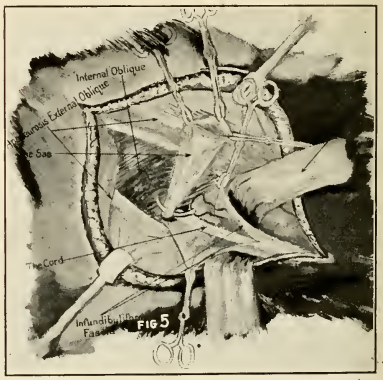
canal (Fig. 3). The normal tension of the internal oblique assisted by the external oblique holds this tube against the floor of the canal in a course parallel with the plane of the ring, and provides a continuous pressure against the ring itself sufficient to overcome the ordinary intra-abdominal pressure. When the intra-abdominal pressure is raised by expulsive efforts, the muscles contract and act like the finger tips when pressed over the internal ring while coughing. Furthermore, on account of the arched course of the fibres of the lower border of the internal oblique and the conjoined tendon, in contraction the internal oblique slides further down over the canal giving additional protection. In herniotomy for oblique inguinal hernia, the large ring reaching much below the border of the internal oblique muscle is the key to the technique we practice in operating.

Technique.

Follow the usual steps to the point of incising the aponeurosis of the external oblique and retracting the flaps. Incise for 1½ inches or more the cremaster and fascia in the line of the cord and retract widely to expose the infundibuliform fascia. Incise this 1½ inches or more as the exigencies of the case indicates, and retract the flaps with forceps clamped on the margins (Fig. 5).

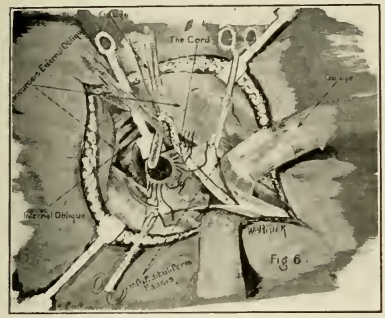


After the sac has been dealt with (Fig. 5), pull the lower part of the Internal oblique muscle with a retractor up well

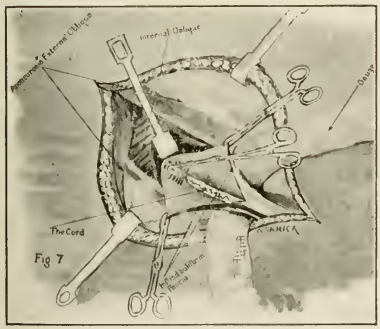


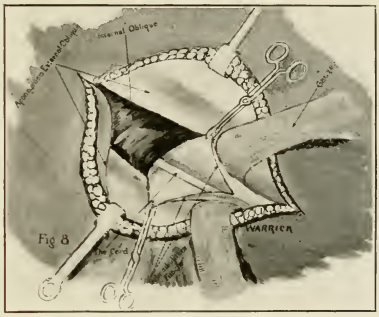
above the internal ring (Fig. 6). Retract the flaps of the infundibuliform fascia sufficiently to expose the entire circumference of the internal ring, de-

taching the cremasteric fascia from the border of the internal oblique, if it interferes with the exposure. Separate the cord from the infundibuliform fascia and with a strip of gauze under it retract it high up (Fig. 6).



Beginning at the lower border of the ring, introduce two, three or more sutures, as needed, passing them through one margin of the ring and across and through the opposite margin. The needle should be guided with the finger in the ring to avoid the deep epigastric vessels and the peritoneum. When these sutures are tied, the lower end of the new ring formed by the top suture should be well up under the internal oblique muscle, when the latter is in position (Fig. 8), and the margins of the ring should lie in contact with the cord, but with room enough to push the closed jaws of a medium sized hemostat through without resistance (Fig. 7), thus insuring that the circulation will not be embarrassed. Before lowering the internal oblique, drop the cord into its bed and introduce one suture at the upper border of the internal ring (Fig. 7), not for the purpose of further narrowing it, but to stimulate round cell infiltration and the production of new fibrous tissue to strengthen the margin of the ring. A few sutures are placed across the floor of the infundibuliform process behind the cord, and a few from one wall of this tube to the other in front of the cord, their purpose being to stimulate round cell infiltration and the formation of fibrous tissue within the infundibuliform fascia and around the cord.





The operation is completed by the Ferguson method or by putting just one suture through the lower border of the internal oblique and Poupart's ligament so as to bring the muscle a little lower over the canal. We prefer the latter method, because of our belief that the internal oblique, normally, is the greatest protection provided for the internal ring, and it seems logical to conclude that by suturing the entire length of the lower border of the muscle, its activity would be crippled, if not destroyed, thus defeating the end in view.

We are well aware, of course, that the results shown in a small group of cases cannot and should not carry much weight. However, we will give our experience to date. Since practicing the above technique, there have been 97 cases operated upon. We have been able to follow up 75 of these. The time from the date of the operation to the final report ranges from 10 months to three years. Three of these had bilateral hernias when operated There was only one

recurrence in these seventy-five cases. This case was infected, there being an epidemic of wound infections in the hospital at the time of the operation. One case was accepted a few months after the operation in the U S. Marines and has since been operated for hernia on the side opposite to the original hernia. This developed some time after his acceptance in the Marines. The site of the original hernia is still intact in spite of the strenuous service. One other case has developed hernia on the opposite side; there being no recurrence on the side of the operation. One case in seventy-five, and three of these bilateral, would give approximately a recurrence percentage of 1.3.

PYORRHOEA ALVEOLARIS AS AN ETIOLOGICAL FACTOR IN THE NON-RELIEF OF SYMPTOMS AFTER SURGICAL OPERATIONS.*

Dr. George H. Bunch, Columbia, S. C.

The primary purpose of any Medical Society is to make better doctors out of its members. This is accomplished by the presentation of clinical observations and problems and the discussion of them by those present who have had similar problems. In this way every fellow profits by the experience of the other fellow. It is not the report of the very rare case that is of most benefit to the society. The more common the condition the more good is likely to result from a discussion of its early recognition and proper treatment.

Pyorrhoea Alveolaris is a disease of more than academic interest in South Carolina. Our records show that of 251 white patients over 21 years of age examined and treated surgically by us in 1920, 15 had no teeth or false teeth; 106 or 44.8 per cent of those with teeth had pyorrhoea associated with more or less dental decay sufficiently advanced to be recognized at a glance by the physician making the physical examination; 130 or 55.2 per cent are classified as having good teeth. Of 114 adult negroes, 3 had no teeth; 65 or 47.4 per cent of those with teeth had pyorrhoea; 82 or 52.6 per cent had good teeth. Of the total 347 adult patients, 182 or 52.6 per cent had good teeth; 165 or 47.4 per cent had pyorrhoea with bad teeth. We find the incidence of pyorrhoea increases with the age of the patient, children do not often have it. There is more than twice the percentage of poor teeth and infected mouths over 40 years of age (65 per cent) than there is between 20 and 30 (30 per cent). In this series of cases only gross pathology was noted. We believe that careful examination will show almost 90 per cent of our adult patients to have some form of mouth infection.

Pyorrhoea means a flow of pus and pyorrhoea alveolaris is a purulent discharge from the alveolar processes. Although the infecting organism has not been proven and accepted, the condition must be an infection of the pericementum and gums. The pericementum or peridental membrane lines the hidden portion of the tooth. It only comes to the gum margin and may be considered as the periosteum of the tooth. It differs from periosteum in that the pericementum when destroyed does not regenerate.

Any chronic irritation within the mouth predisposes towards pyorrhoea. Beginning locally the disease is progressive and ultimately, if treatment is neglected, all the teeth become involved. It never develops about a clean tooth but it is often found about sound teeth. An accumulation of sordes, food debris, mold about a tooth is the food necessary for the development of the organisms which must be often present in every mouth. The gums become tender, swollen and spongy; they are purple in color as if from a venous congestion. They bleed easily, in severe cases from being touched by the examining finger. As the pericementum is invovlved and destroyed the gums recede from the teeth. When pressed with the finger the tissues about the teeth exude a foul pus. The teeth become loosened and in advanced cases may fall out. The breath is stinking—no other word expresses its foulness. From the tenderness about the teeth chewing is at first painful. Later when the teeth are loose proper mastication is impossible. The discharging pus is swallowed with the saliva. The patient loses appetite. Nothing tastes right. There is absorption of toxins and the infecting organisms may get in the blood causing

*Read before the Tri-State Medical Society, Spartanburg, S. C., Feb. 16-17-18, 1921.

arthritis, endocarditis, nephritis with hypertension or any of the systemic conditions dependent upon focal infection. Patients with extensive pyorrhoea do not, cannot feel well. There is a lack of energy, a tendency to headache, to constipation, to backache. They tire easily. They are subnormal. They have a mild secondary anemia and are apt to be sallow.

The disease is often associated with abdominal pathology demanding surgery. Whether this in any way has the relationship of cause and effect or whether it is merely a coincidence we do not know. It is not unreasonable to suppose, however, that pyorrhoea might cause duodenal ulcer, cholecystitis, or appdendicitis, either through the blood stream or by direct infection from the swallowed pus. It would be interesting to watch a series of such cases in which the pyorrhoea has been properly treated to see if there is improvement in the abdominal pathology from the removal of the focus of infection. We believe that women with it have a tendency toward increased and irregular menstrual flow. We believe that if there is local pathology in the pelvis to cause uterine bleedingg that the toxemia from pyorrhoea makes it worse. If there is backache from uterine misplacement, if there is indigestion from gastric or duodenal ulcer, if there is loss of appetite or nausea from chronic gall bladder disease, the symptom is accentuated by pyorrohea. These people, although not actually sick, are chronically indisposed and abdominal or pelvic surgery done on them will not entirely relieve them of symtoms until the associated pyorrhoea is removed.

This disease is a direct result of unclean teeth, and work for its prevention should begin as soon as the teeth are cut and should continue as long as the teeth last. General Obregon has wisely said he had rather teach the Mexican people to use the tooth brush than the rifle. The use of the tooth brush and the necessity for clean teeth should be taught in the home and in the school. The tooth brush is even more important than the wash rag. Teeth that are well brushed twice a day with a stiff brush will not become infected nor will they decay. When pyorrhoea is recognized the patient should be sent to a competent dentist to have the teeth freed from mold and tartar, especially about the roots. Accumulations should be removed and kept removed by the tooth brush supplemented by periodic visits to the dentist. If two-thirds the pericementum is destroyed the tooth is hopeless and must be extracted.

When the patient has an abdominal lesion demanding surgery, shall the teeth be pulled before or after operation? Each case must be decided on its merits. If a simple appendectomy is done and the patient is in good condition, the teeth may be pulled before he comes from under the ether. If the operative risk be poor and the necessity for operation not imperative, the teeth should be pulled under gas anaesthesia and the patient allowed sufficient time to get the benefit of the extraction and the freedom from absorption before submitting him to operation. After extraction the sockets should be curetted to remove all loose fragments and dead bone. Pulling teeth is more of a shock to the patient than we realize and should not be done at the time of operation unless the patient is in condition to withstand the double ordeal.

The necessity for specific treatment of the luetic patient after operation is recognized everywhere. The frequency of malaria in this climate as a cause of post operative fever has not been appreciated. The role of syphilis, tuberculosis, malaria and hookworm in complicating surgical convalescence and in indefinitely prolonging post operative morbidity must not be forgotten. Pyorrhoea is more common than any of these and may be the unrecognized and untreated cause of continued ill health after operations that have removed the abdominal pathology but have not cured the patient. We have had cases demonstrating this repeatedly and in conclusion will give one case history.

1920 case No. 281:

Mrs. W. F. H., age 38, housewife, mother of four children, all living, youngest 3 years, was admitted to the Baptist Hospital September 27, 1920.

Family History—Negative.

Previous History—She had influenza in 1918. The menstrual periods have been irregular for two years, coming every two to four weeks and lasting five days with considerable flow. Her back aches all the time. Her head aches during menstruation.

Present History—For two years she has had pain and tenderness below navel on right side but has had no acute attacks. She is often nauseated but this has no relationship to eating and she does not vomit. She has no appetite and is very weak. She has had bad teeth for over a year.

Physical examination shows a frail woman, sallow, somewhat emaciated. Her breath is foul. She has advanced pyorrhoea. Several molar teeth are missing but all the teeth present are involved. The gums are spongy and bleed when touched. Many of the teeth are loose and pus wells up about them when the gums are pressed against them.

Chest is negative. The urine is negative. There is tenderness on deep pressure over McBurney's Point. Bimanual pelvic examination shows the uterus retroverted without evidence of adnexal inflammation. The perineum is lacerated and relaxed.

Pre-operative Diagnosis—Chronic appendicitis, retroversion, lacerated perineum.

At Operation—Open type, non-inflammatory appendix was removed. The uterus was suspended by the Gilliam method and perineorrhaphy done.

Post Operative History—Convalescence was slow. The laparotomy wound suppurated but healed without hernia. The patient sat up the 14th day and went home on the 21st day but she did not gain strength and weight satisfactorily. The headache, the backache, the nausea, the weakness continued but were less severe. The pain in the right side has not been felt since operation. On December 6th, under gas anaesthesia she had all her teeth extracted. When seen on January 6th all evidence of pyorrhoea had disappeared. Her appetite was ravenous. The nausea, the backache, the headache had not been felt since her teeth had been pulled. She complained of her clothes being tight and says she has gained 14 pounds. Her color is good. She is a new woman.

THE DWARF TAPEWORM (HYMENOLEPIS NANA) AS THE CAUSE OF INTESTINAL SYMPTOMS WITH REPORT OF CASE.*

Dr. J. M. Northington, Charlotte, N. C.

Since Stiles (1) called attention to the prevalence of dwarf tapeworm infestation a great number of cases have been reported. But the vast majority have been investigated and recorded more from the statistical or epidemiological, than from the clinical viewpoint. Also, very soon attention was focused on the fact that, in many instances, infestation was proven in the absence of clinical symptoms, the parasite being "present but not voting." This has led to a decidedly skeptical attitude as to the pathogenicity of this organism.

Goldman (2), in a recent article to which further reference will be made, has compiled an extensive bibliography. Here will be abstracted very briefly those papers dealing more particularly with the symptomatology. Deaderick (3) reported four cases in 1906. Of these patients two had epigastric pain; three markedly abnormal appetites; two complained of nausea and vomiting; and one suffered with diarrhoea. None was free from well-defined abdominal symptoms. Eosinophile counts were 9, 11.5, 15 and 26 per cent.

Schloss (4), out of 20 cases showing the ova in the feces, found 12 with well-marked symptoms attributable to the infestation. Among these were epigastric pain, nausea and abnormal appetites, and a train of nervous phenomena reaching from restlessness to convulsions. Eosinophilia, in 11 cases, ranged from 5 to 20 per cent. In all cases treated there was apparent cure or marked amelioration of symptoms.

Bass and Gage (5) reported 15 cases. All except four presented symptoms; many in great variety. Among the diagnoses to which these symptoms had led were gastritis, appendicitis, neurasthenia and melancholia. Eosinophile counts ran from 1.4 to 8.5 per cent.

Gerber (6) reports one case, a boy of 17, who had weakness, giddiness, head-

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ache, facial edema and convulsive movements. The eosinophile count was 14 per cent. One week after one treatment all symptoms had disappeared and the eosinophile count showed 8 per cent.

McNeil (7) in five cases found eosinophilia in four and symptoms in all. De Buys and Dwyer (8) made a study of 595 individuals in seven institutions for infants and children. The ages ranged from three months to eighteen years. Fifty-five were found to harbor the dwarf tapeworm, but 36 of these were infested with other intestinal parasites. Symptoms present were not classified by the kinds of parasite present, so would be of no use in this connection.

Goldman (2) reports seven cases in one family, four with definite symptoms reasonably attributable to the tapeworm. Two of the three symptomless children showed few ova and few eosinophiles. The eosinophile range in those with definite symptoms was from 6 to 9 per cent. One in this series is of especial interest because of the history of a bloody diarrhoea of several months' standing. After one of the treatments with male fern tags of membrane in which were embedded heads of the dwarf tapeworm were discharged. This seems to explain the bloody diarrhoea and to confute the idea that local lesions produced by this worm are slight. Three of this series were treated. One was cured and in the other two there ensued marked amelioration of symptoms.

These case reports appear to bear out Stiles (9) in his statement that it is a serious error to assume this parasite to be of no significance.

Some idea of the prevalence of infestation may be gained from the report of the findings in the examination of sixty-odd thousand individuals in various States of the South (10). The incidence of Hymenolepis nana to that of Tenia Saginata in this series was as one hundred is to one.

The diagnosis may be readily made by examining the feces for the characteristic ova. These are nearly spheric. The embryo, which usually shows three pairs of hooklets, is about 25 microns in diameter and is closely enveloped by a membrane. Another membrane, 40 microns in diameter, is separated from the first by a gelatinous appearing substance. The comparative translucency of the ova should be borne in mind, and a minimum of light used.

Case Report.

I. W., male, colored, 23; born in Charlotte. First seen Oct. 4, 1920. Complained of griping pains in abdomen over past eight or ten months. Bowels too free at all times without laxatives. Stools bloody when pains are worst. Never goes week without passing blood. Never nauseated; pain uninfluenced by food. Has lived in Charlotte all of life except one year in Philadelphia. Boards. No association with any one presenting similar symptoms.

Physical examination was negative except for moderate general abdominal tenderness. The only blood abnormality was a 7 per cent eosinophilia. The stools were examined for ameba, with negative results. Symptoms continuing, patient returned on Oct. 19, when many ova of the dwarf tapeworm were found. On Oct. 24, 1½ drams of oleoresin of male fern were given. The patient was instructed to preserve the stools for examination. He did this in such a way as to make a satisfactory examination impossible. Nov. 1, patient came to report that he felt all right. The blood count was practically unchanged. Dec. 2, he complained of some looseness of the bowels, but no blood. Stool examination was uninstructive. He was directed to return if he had pain or bloody evacuations. On Jan. 11, 1921, he reported that he had passed some blood the previous night and had five or six stools in the 24 hours. After using methods for concentrating the possibly present ova, a very few were found. The aspidium was repeated. The stools were again lost. Since this date careful and many times repeated examinations of the feces have been made, with uniformly negative results. The patient says he feels well, has no diarrhoea, and has gained 15 pounds since his first treatment. Blood examination, Feb. 12, shows PNN 71, M 26, E 3.

It is not claimed that it has been proven that this patient's symptoms were occasioned by the tapeworm; or that he has been permanently cured. The clinical points of similarity shared by this case and one of those reported by Goldman (2) strengthen my inclination to ascribe to the parasite a causal relationship.

Summary.

1. The dwarf tapeworm is by no means a rare parasite in this section.

2. The evidence tends to show that infestation may cause severe symptoms.

3. In any case presenting abdominal symptoms, or in childhood, nervous symptoms, with no evident or readily ascribable cause, particularly when there is added a moderate eosinophilia, the stools should be examined, and the dwarf tapeworm should be one of the parasites to be borne in mind.

4. Treatment looking to the expulsion of the worm should be instituted as soon as the diagnosis is made and repeated until the stools are persistently negative.

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DIAGNOSIS OF COMMON STOMACH DISEASES.*

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After reading over the preliminary program of this meeting and observing the series of papers which would deal with disease of the gastrointestinal tract from a surgical point of view, I determined to alter somewhat the kind of paper which I originally intended to submit, and to briefly point out some diagnostic indications in the study of common stomach diseases.

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Physiological Considerations.

Internists, generally, now are disposed to place the motor or mechanical factors in a position of greater importance than that given to perversions or variations of secretory factors in the early manifestations of the symptomatology of gastric diseases. In supporting this view, one should recall: (1) that the fasting stomach is in a state of tonic contraction and never empty, containing 50 to 100 c.c. of gastric juice of Hcl and pepsin; (2) that hunger is characterized by rhythmic gastric systoles; (3) that repeated swallowing motions cause an inhibition of gastric tonus; (4) that food entering the stomach at once starts peristaltic action and this continues as long as food remains in the stomach; (5) that these peristaltic actions proceed from the parmedia toward the pylorus in rhythmic sequence, producing a constant pressure in the antrum; (6) that the first third cardiac of the stomach serves merely as a reservoir and relatively, exhibits only slight peristaltic activity; (7) that 300 to 500 muscular waves (estimate) pass through the stomach per hour, when the stomach is emptying a meal.

In recalling the chemical and motor factors of gastric digestion, one should remember that the acid contents of the fundus closes the cardia; (2) that the pylorus opens in response to motor and chemical influences; and (3) intermittently the gastric chyme is injected into the duodenum; (4) that the presence of acid chyme in the duodenum closes the pylorus and keeps it closed until the duodenal contents become neutral or alkaline, when the pylorus relaxes receiving in this manner gastric contents until the stomach is empty of food. While the above statements are open to some question as to exact (scientific) proof the experiments of Cannon and other physiologists, as well as the observations of Smithers and other clinicians, seem to support them. Bearing on this phase of the subject, the experiments of Miller, Bergeim, Rehfuss and Hawk, Philadelphia (1), are worthy of a brief note here. They found that the sight of a neatly set table with nourishing food resulted in a distinct secretion of gastric juice in normal man; that odor also produced the same effect, but not so markedly; that tasting and chewing of food, without seeing or

smelling, produced no marked secretion; that the combined stimulation of tasting, chewing and smelling of food produced a greater secretion of gastric juice than smelling alone; that the sound and thought alone of a frying beef steak produced a gastric secretion but smell and hearing alone produced little effect; that foods poorly or distastefully prepared and unsavory of odor or taste, with thoughts of unwholesome nature, resulted in a delayed acid secretion and a tardy evacuation of the stomach; that newspaper reading during a meal appeared to exert no influence on stomach function.

These authors (2) also tested gastric response to tea, coffee and cocoa. Using a uniformly mixed meal in normal persons, upon drinking a liter of cold water, cold or hot tea, hot coffee either plain, with cream or with cream and sugar, they found that the evacuation time of the stomach was not significantly delayed; that the addition of sugar alone to plain coffee delayed emptying; that a liter of cocoa markedly delayed gastric evacuation but small amounts had less effect; that these beverages, however, produced high acidity but apparently by this, the evacuation of the stomach was not delayed; that coffee with sugar alone delayed production of gastric acidity; that coffee with sugar and cream had less effect upon acidity; that cocoa distinctly delayed acidity. They observed that heart beats were markedly increased, vaso-motor relaxation, tremors and other nervous signs were produced by a liter of tea and coffee, while cocoa did not produce these effects but on the other hand excited a sensation of fullness of the stomach. (3) These authors (4) found that 100 grams of cane sugar or glucose in concentrated solution markedly retarded secretion and delayed the evacuation of the stomach; that small amounts (10 grams) did not act in this way; that candies inhibited secretion and retarded evacuation in prorportion to amount taken. This effect was much modified by adding food, as milk, eggs or chocolate.

These authors (5) found that the acid response and evacuation times of nearly fifty kinds of pies, cakes and puddings in normal persons were as follows: average time for puddings was 2 hours and 18 minutes; for pies 2 hours and 27 minutes; for cakes 3 hours and 2 minutes. The total acidities average for puddings 92; for pies 90; for cake 90. So puddings, while producing greater acidity, were handled better than pies, while cakes were less easily cared for than pies or puddings. (6)

Diagnostic Considerations.

1. Gastric Symptoms—The domain of subjective symptomatology in stomach diseases deserves accurate observation. Stomach trouble has its beginning, whether from causes within or without the stomach, in the appearance of a rather clear group of symptoms, often not adequately considered by physicians. In the patient's narrative of his past and present clinical history it is important to note the development and the real nature of certain "troubles" that appear during gastric digestion. The loss of weight, the loss of appetite (anorexia), the appetite for unusual food (parexia), the excessive appetite at meals (polyphagia), the unsatiated appetite (acorea), the burning sensation in epigastrium or sternal region before or after food, the regurgitation of gastric contents and the eructation of gas, the occurrence of pain, its time, duration and character, nausea, and vomiting, all these are symptoms directly related to gastric misfunction and should be early run down in order to understand their diagnostic significance. The fat-forty-female-belches-gas spells-gall stone-aphrorism is an illustration of the interpretation of a late and quite common syndrome appearing in the domain of gall tract surgery, which the practitioner and the internist may rightly apply in the interpretation of common stomach symptoms. The feeling of distress after eating, a sense of distention or gas formation, associated with morning headache, dizziness, depression of spirits, drowsiness, lack of energy, muscular lassitude and cramps are usual subjective symptoms in stomach cases which every practitioner should clearly evaluate in terms of present misfunction or oncoming disease. Probably no more important investigation in subjective symptoms can be made than in the field of pain because pain is usually the symptom which causes the patient to consult the doctor.

Friedman (7) has divided gastric pain into the continuous and intermittent varieties. The continuous types are due most frequently to (1) carcinoma, (2) marked pyloric obstruction, and (3) penetrating ulcer with peritoneal involvement. The intermittent pains are divided into (1) immediate, (2) early, and (3) late: the immediate pains are found in (1) ptosis, (2) neurosis, (3) obstruction of the cardia. and other conditions: the early pain, including first hour after eating, are most often due to adhesions in any part of the stomach, including (1) ventral hernias and (2) pericholecystitis; late pains (one to three hours after eating) are due to (1) intragastric pressure or (2) pylorospasm, usually resulting from hyperacidity.

The so-called hunger pain is thought by Hamburger and others to be due to strong contractions and intragastric pressure; this does not altogether satisfactorily explain them but the fact remains that when present this type of pain is accepted as an indication of chronic ulcer.

2. Gastric Analysis — Fractional analysis of gastric contents during the period of digestion has come to stay as a diagnostic method. It is a useful procedure and reveals many interesting points in the process of stomach function but its two chief directions of information are to be found in (1) variations of motility of the stomach after the introduction of a test meal; (2) disclosing perversions of gastric secretion. If we know for instance that the simple Ewald test meal which is the one of low acid and rapid evacuation variety, produces an acidity of more than 80 or less than 20, and evacuates the stomach only after two hours and a half or within one hour and a half, we may judge fairly accurately of the stomach misfunction by its use.

Rehfuss and Hawk (8) in connection with rapid evacuation of the test meal from the stomach (hypermotility) give this test four general diagnostic explanations:

(1) Subacidity and achylia; (2) small percentage of duodenal ulcers; (3) a form of scirrhous carcinoma converting the pylorous and antrum into a funnel; (4) a group of stomach cases due simply to peristaltic overactivity (gastric Chorea, French). To delayed evacuation (hypomotility) they give two diagnostic indications: (1) atonic stomachs: muscle defects with dilatation; (2) organic obstruction: as in contracting pyloric ulcer. carcinoma of the pylorus, hypertrophic pylorus, benign tumors, pylorospasm. syphilis of the stomach, adhesions from without (gall-bladder and pancreas, etc.) As just stated fractional analysis is an aid in determining the perversions of secretion. We may do well to recall some of the general conclusions of the above mentioned workers as to the diagnostic meaning in this function.

1. Clean Digestion Group—Cases of disordered or perverted secretion without evidence of mucous membrane disease or irritation are called clean digestion, usually appearing as a digestive or post digestive hyperchlorhydria (hyperacidity) seen often in the so-called reflex cases, as gall-stones, appendix and abdominal adhesions. The assumption is that the disorder of the secretory apparatus, appearing without mucosa irritation, comes through the nervous inervation of secretory glands of the stomach.

The "Clean Subacidity" fractional tests are ascribed to constitutional or metabolic disease or gout, thyroid disease, pellagra, etc.

2. Mucous Group—Fractional analysis of gastric contents discloses a second group that assumes rather definite diagnostic significance. This is called the mucus group. In cases showing gastric mucus. noting particularly the distinction between swallowed mucus and true gastric mucus, indicates true disease of mucous membrane and introduces that large group of cases, the gastritis group. Some one has enumerated two hundred causes for chronic gastritis; a common condition of varied etiology.

3. Secretion Variations and Intragastic Blood Group—The fractional analysis of the stomach showing variations from the normal in secretion and the pressure with simple intragastric blood, may reasonably be diagnosticated as ulcerations (minute erosions), acute ulcerations (multiple erosions), chronic ulceration, carcinoma or gumma.

4. Secretion Variations Plus Blood, Pus, Mucus and Bacteria Group—This indicates diagnostically infection, inflammation and ulceration and (it) may

be indicative of serious infective gastritis, gastric carcinoma or gastric syphilis.

3. X-Ray Examination—The study of gastric disease need not depend alone upon the chemical analysis of its secretion or upon the time of evacuation of a test meal, because nothing contributes more to an accurate understanding of the disease of the stomach than serial radiography and fluoroscopy. The improvements of the apparatus for X-ray study of gastro-intestinal tract and the skill of the roentgenologist in the interpretations of the position, the peristaltic activity and the presence of adhesions, obstruction or pathologic structure in the stomach and adjacent region, are such as to make the internist and the surgeon far more assured of accurate diagnosis than is possible by physical examination, or gastric analysis alone.

Carman's (9) contribution on the roentgenographic study of spasm of the stomach offers us a favorable opportunity to disclose X-ray values as a diagnostic aid. He mentions briefly in this connection that spasm of the stomach is either intrinsic or extrinsic: (1) intrinsic, if due to an intragastric lesion; (2) extrinsic, if due to lesions outside of the stomach. In ulcer, three forms of spasm may be distinguished: (1) incisura or hour-glass stomach; (2) diffuse spastic distortion of the stomach; (3) spasm of the pyloric sphincter. The defect or niche in these cases is persistent. Extrinsic spasm arising from ulcer of the duodenum, gall-bladder and appendical lesions, usually are localized or regional, but sometimes produce total gastrospasm which is out of proportion to any physiological activity. He does observe that belladonna or atropine has no effect upon the intrinsic spasm, but in extrinsic type the deformity may disappear, after physiologic effect of the drug is attained.

Group Diagnosis—The more modern trend in practice is back to the position of the general practitioner: to the grouping of specialists for a general study of the ailing body.

Specialism through recent decades has so increased scientific knowledge that each organ or system of the body has almost become a domain for the elaboration of a distinct science or specialty. This has brought about a large number of skilled specialists working in different and differing fields of medicine. The inevitable isolation of such specialists, as they have become more and more engrossed in problems peculiar to the several specialties, has brought us face to face with the grave faults of this movement in medical practice which has made it imperative to bring about a change in the interest of efficiency.

So, to reap the benefits that specialism has brought and to escape the serious evils that its individualism has become by its natural use, an effort has sprung up to bring into operation a team-grouping of specialists for general and special study and general and special therapy of the diseased body. By what seems to be a solutary development, by group medicine we may forestall not only the menace of a scientific "State Mate" but also a gross tendency to commercialism which has been showing itself in the system of referring patients from one specialists to another without a general or organized "interpreter." Group medicine should bring back, in the person of group specialists, the general practitioner who, in his time, did excellent work for his patients in the field of medicine, surgery, obstetrics and disease of eye, ear, nose and the throat. So, a well mannered group of specialists—as experts of several fields of medicine, may serve with accuracy, fairness, and efficiency the diseased body and by the application of special diagnosis and special therapy effect cures.

Group medicine in the diagnosis of stomach diseases offers us an especially favorable opportunity for illustrating this newer arrangement in medical practice. Diagnosis of stomach disease, as well as the treatment of them, may fall in the domain of several specialties. For instance, taking the so-called "reflex" indigestion group of stomach diseases, the association of the surgeon with the internist in diagnosis and the removal of the cause of this condition is quite important in this connection. In these cases also, group assistants in the microscopic, pathologic and the X-ray laboratory, form a most able help in successful etiologic diagnosis. The "reflex" stomach misfunction may get its primary etiology in an infected gall-tract, in a diseased appendix or in some

other surgical condition. Only surgical treatment can be relied upon to replace the stomach in position for medical treatment. Again, to illustrate, in the dual field of the ophthalmologist and the internist may be found a quite considerable number of stomach diseases. Eye strain and refractive errors are common causes of disfunctionation. The proper treatment of the eye condition is a primary requirement before the internist can hope to succeed in restoring the stomach. So, the best etiologic diagnosis oftentimes of stomach disease can be attained only after the patient has been reviewed and studied by a general group of experts. The more or less permanent association of such a group upon a basis of mutual respect and harmony makes the work stronger and less likely of error.

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Discussion.

By Dr. I. N. Upshur, Richmond, Va.

I want to say a few words in regard to gastric disturbances. It is the widest field I know and one that requires the most careful examination of all the maladies we see. I would group the causes of indigestion into three—functional, where the indigestion is more or less acute and of a shorter duration; the reflex causes and organic causes. It isn't necessary to consume any time discussing the organic causes which we all recognize may be due to ulcer or cancer and I would put under organic causes adhesions of the gastro-intestinal canal. But I want to call your attention especially to the reflex causes. One of the most common of the reflex causes I have seen was where the reflex came in women having some trouble in the pelvis. I have seen quite a number of cases in my experience where a woman had indigestion as the result of chronic pelvic disease and without giving that patient any remedy directed to the stomach the intelligent treatment in relieving that pelvic trouble has relieved and made a cure of the gastric disturbances. You can very well see how that might come about, if you will just reflect for a moment how pregnancy by its reflex influence will produce vomiting. Vomiting as a reflex disturbance is a thing familiar to us all.

Along with this cause of indigestion, any one of the potent factors of indigestion is on the nervous side. You see men and women broken down from the pursuit of their calling, the strain and stress of domestic worries where they have intractable indigestion, and that indigestion when you come back to it, is due to the fact of the nervous exhaustion and more or less it impairs the stomach motility. As a result of that, peristalsis stops before it is complete and then fermentation comes on, and disturbance from gas and pain are common as a result of that. Furthermore, we see some conditions of digestive disturbances where if you carry your investigation far enough, you will find the cause of that indigestion probably gall tract trouble, or appendicitis. I have seen indigestion because of the fact that cardiac disturbance was impairing the nutrition of the stomach more or less. That condition of indigestion is not an uncommon thing in my experience.

One remark more—you see some conditions—and I know I am going to be disagreed with by the majority of the men here because they say I am a crank about tobacco. But the physilogical effect of tobacco and the excessive use of tobacco impairs cardiac nutrition and impairs the normal muscles of the stomach.

Dr. Brown, closing the discussion.

I think we have had quite an ample discussion of this subject in connection with this and the preceding paper. I merely, in concluding, want to impress the point brought forward in my paper which called attention to the studies of the emptying time of various foods from the normal stomach and to say that these facts should serve as a guide to us in estimating what the diseased or dysfunctioning stomach is required to do.

CEREBRO-SPINAL MENINGITIS.*

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Since the earliest days of man there has been recognized a sort of symptom complex known by various names, as spotted fever, malignant purpuric fever and petechial fevers. The first well described outbreak was in Geneva in 1805. Various periods and epidemics have been described and written about by many authors since that date. It is probably of interest to note that the first authentic report of the disease in the United States was made in Massachusetts in 1806. Records give the 1905-06 New York epidemic the highest mortality.

It is an infectious disease which occurs sporadically and epidemically, caused by the diplococcus intracellularis of Weichselbaum. It is probably disseminated by "carriers" who harbor the germs in the nasal and throat passages. Overcrowding and lack of sanitation, poor nutrition and cold weather seem to predispose to the spread of the disease. Infection is supposed to occur through the mucosa of the nose and sinuses.

No incubation period has been definitely agreed upon, the onset being sudden and in most cases quite unexpected.

The literature describes three forms of the disease based upon the duration, severity of symptoms and ultimate results. They are spoken of as the mild type; aborptive type and severe or fulminant form. The mild type is marked by slight fevers, general malaise and perhaps vomiting: These cases run a course of a few days and recover. The abortive type is to be seen in the very strong children with great enough resistance to withstand severe infection and throw it off, quickly convalescing. The onset of this type is sudden with more pronounced symptoms than the milder form but with recovery in perhaps ten days. This type is more often confused with acute rhinitis and is diagnosed by bacteriological examination of the spinal fluid and nasal discharge. The ambulatory cases of this type are the ones who spread the disease most frequently as the so-called "carriers" visiting from one home to another. Their nasal exudates are conveyors for the diplococcus intracellularis. The severe type is just what the term signifies. There is a sudden onset, generally a chill followed with a high fever (102-105, variable pulse rate, irregular respiration as sighing and labored or Cheyne-Stokes in type. Severe pain in the head and vomiting may come on later. Usually there is more severe pain in the back of the neck. Moaning and delirium follow frequently. Vasomotor disturbances, as flushing of restricted areas, may occur. The skin scratch test shows hyperemia lasting several minutes. The tendons are all very sensitive and the reflexes, as the patellar, are usually absent. Kernig's sign is generally positive and the Babinski in a large per cent of the cases. Brudzinski's neck test is always present in all types of severe meningitis. The identical collateral sign, i. e., flexion of one leg on the abdomen produces the same position in the other leg. There is rigidity of the neck muscles and generally retraction with stiffening of the muscles of the back. The pupils are generally dilated but may be irregular or pinpoint in size. Strabismus is frequent and occasionally one sees nystagmus. E. Burville-Holmes, writing in the Journal of the American Medical Association, Jan. 25, 1908, says: "Symptom of cerebrospinal meningitis that he has not been noticed in the literature of the disease, viz, analgesia, or partial or complete anesthesia of the conjunctiva and cornea. The writer has found this sign in fully one-half of a large number of cases—even in patients who were perfectly conscious in some instances." Wesson (N. Y. Med. Jour., April, 1913) says: "The only early constant sign of diagnostic importance is a relative rigidity of the neck. The temperature is a misleading criterion as to the state of the disease." Some writers have laid much stress upon the rash, while others condemn it as being inconstant, easily confused and misleading and only suggestive of the true disease.

During the course of the disease either constipation or diarrhoea may be present. The bladder and kidneys usually act well but there may be incontinence of both urine and feces. Owing to the loss of appetite and severe demands of the disease there is gener-

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ally marked and rapid emaciation. The abdomen is often retracted, especialy when there is marked constipation. There is usually a noticeable alubuminuria.

A brief description of the pathology is not out of place. In most cases the membranes of the brain and cord are deeply congested and opaque. Serofibrinous or purulant exudation is found both at the base and along the convexity of the brain especially in the fissures and along the blood vessels. The spinal meninges present similar changes, the posterior surface of the cord being particularly involved. The cranial nerves are included and in many cases the ventricles are distended with turbulent fluid. The organs exhibit the changes commonly found in acute infections. In rapidly fatal cases the lesions may be very slight.

Keeping in mind the pathology of this disease one can readily appreciate many reasons why there is, or may be, such a wide variation of symptoms, types, complications and sequelae. The complications and sequelae may include convulsions, paralysis, defective vision from optic nerve atrophy or inflammation in the eye, defective hearing from inflammation of the auditory nerve or suppuration in the middle ear, pneumonia, arthritis, aphasia, peripheral palsies, imbecility, chronic hydrocephalis, persistent headaches from chronic meningitis, etc., etc. Blindness and deafness generally are permanent.

The prognosis of such a disease must necessarily be guarded to say the least. The mortality rates, based upon all epidemics, averages 70-80 per cent with 20 per cent maimed recovery.

The diagnosis of cerebrospinal meningitis should by all means be made very early in the disease for obvious reasons. If symptoms in any case present themselves from which a suspicion of meningitis arises, lumbar puncture should be performed by a competent man and 5 to 10 c.c. of spinal fluid withdrawn to establish a diagnosis. In case of doubt after examination of the spinal fluid the ventricles or subdural space may be tapped without danger if proper technique is observed. Flexner points out that not all turbid fluid means cerebrospinal diplococcic disease, nor does all clear fluid under pressure mean tubercular meningitis because the early cases of cerebrospinal meningitis present a clear fluid which contains the diplococcus in the spinal fluid, ventral or subdural fluid is postively diagnostic of cerebrospinal meningits, regardless of the varying symptons and physical findings.

The treatment of this disease may be divided into three main divisions, viz., prophylatic; symptomatic; and curative with a possible subhead of supportive.

Under prophylatic treatment one would note quarantine and isolation of all known cases; quarantine of probable carriers until proven noninfectious; bacteriological examination of the secretions of the nose and throats of all nurses and attendants; the proper clothing and disinfection of all visiting physicians and the proper care of the excretions and after care of the sick room by the proper health authorities.

The symptomatic treatment needs no explaining? It would consist largely of stimulants, sedatives, laxatives, diuretics and any and all measures intended for the comfort and welfare of the patient.

The curative treatment is summed up under one word, i. e. serotherapy. Antimeningococcus serum, after the formula of Flxner should be given immediately after the diagnosis has been established. It is given directly into the spinal fluid or into the sagital sinus, in rather large doses. The operator draws off 15 to 30 c. c. of fluid and then through the same needle injects 20 to 60 c. c. of the Flexner serum. Daily injections of 30 to 60 c. c. are required when improvement is slow. Untoward results are as uncommon as in serum treatment of any other infectious disease. Anaphylactic symptoms sometimes appear but soon wear away without leaving a permanent injury?

T. G. M. Hine, writing in the British Medical Journal Sept. 18th 1920 advocates the typing of various strains of meningococci into four types with relative mortalities, type one showing nine percent while type four shows seventy five percent mortality. For these types he advocates monotypical sera but Rolleston in the Lancet of January 19th 1918 says: The results of the serum treatment in the Royal Navy showed that "of the several types of srum used, that prepared by Flexner was the only one very effective." Serum rashes oc-

curred in 60 per cent of the cases but without significance.

Without serum treatment the mortality is 70-80% with 20% maimed recoveries. With serum the mortality runs about 15-20% with 70-80% recoveries, most of whom are without deformities or impairment if the treatment was commenced early in the disease.

Report of Case.

H. A., age 9 years, girl.

I was called to see this child who at that time should have been convalescing from an attack of influenza The attack had been supposedly severe and the child did not recover quickly.

The first examination showed a well nourished child, well developed and strong but with a beginning retraction of the neck and spine and rigidity of the muscles of the neck. She would cry out with pain when touched or turned about and would not tolerate examination of the neck muscles. The pupils were moderately dilated and the patient was rational most of the time. I immediately summoned a competent bacteriologist and a lumbar puncture was done with a positive diagnosis of cerebrospinal meningitis available four hours later. A second lumbar puncture was done as quickly as possible and fluid withdrawn to relieve tension and make room for serum. The fluid was slightly turbid in appearance and showed a high cell count with Gram negative intracellular diplococci present. About 30 c.c. of serum was injected daily for eight days, then a rest was taken to watch results. We got serum rashes, reactions, emaciation, varying temperature (which always fell after the administration of serum) convulsions of the left half of the body while the right side of the body was temporarily paralyzed, loss of mind; loss of hearing and impairment of eyesight; incontinence of urine and feces; inability to speak; irregularities of the heart and many more symptoms which no one had the time to chart at the time. This patient had dilated and irregular pupils from the first and the one greatest index to the amount of pressure accumulated was the size of the pupil. This child received 32 lumbar punctures and 24 doses of serum.

Many of the punctures were made for relief of the pressure and symptoms arising therefrom. The diplococci soon disappeared from the fluid but the accumulation demanded relief by puncture, the fluid often running six inches to a foot from the end of the needle when suddenly released. This accumulation of sterile fluid was quickly controlled by the administration of the dried extract of thyroid gland, two and a half grains a day.

The mental symptoms were the last to disappear. When the mind returned it did so quite suddenly, much to the surprise of all concerned.

Eventually this child returned to school with eyes protected by shades and with requests to teachers to avoid overtaxing her mind. During her severe illness she had two recurrences and after she had started back to school she would have mild periods of semi-consciousness when confined to the schoolroom for too long periods. During these attacks her heart seemed to be very irregular. They only lasted a part of a day or night.

The only remaining impairment now seems to be a failure to exercise judgment at times rather than any mental inability to learn. She will eat ravenously at times and produce attacks of acute gastritis. I have seen her in two such attacks and when the stomach had been emptied one could hardly believe what he saw in the line of both quantity and quality of food she had eaten. She has since moved away and I am unable to follow her case further.

Conclusions.

While cerebrospinal meningitis has been known for a great period of time but little is really known about it.

It is infectious, its causative germ answers to all of Koch's postulates but its incubation period is not definitely known.

It attacks children more often above two years of age and enters through the nose and sinuses causing a primary encephalitis.

Its pathology is most extensive and destructive and no disease is more tragic in its complications and sequelae.

Its symptoms are of wide variation and not always reliable. That lumbar puncture and bacteriological diagnosis is reliable.

The germ is present in nearly half of the cases in the nasopharynx.

Healthy contacts develop cases.

One should give serum early and plentifully.

Lumbar puncture should always be permitted to confirm diagnosis of suspected doubtful cases.

Sporadic cases can be killed down and wiped out if proper prophylactic remedies are carried out.

Discussions.

Dr. J. W. MacConnell, Davidson, N. C.

I have seen more cases of cerebro-spinal meningitis than I hope to see again. During the Camp Jackson epidemic in 1918 I was on the Base Hospital staff and saw all of the cases with Major Herrick, Chief of the Medical Service. In this epidemic there were 286 cases and we saw meningitis in all forms and with all complications. Following this experience I would make the following suggestions as to treatment, these conclusions having been reached by Major Herrick and the Hospital Staff.

Cerebro-spinal meningitis is not simply a meningeal infection, for you may have a meningococcemia, even when the diplococus is not present in the spinal fluid. In other words, you have a blood stream infection which may or may not attack the meninges. Consequently, the best form of treatment is intravenous and not simply inta-spinal. We certainly came to that conclusion and I would not be afraid to give much larger doses than in the case reported by Dr. Hockett, and instead of giving 30 c.c., I would give 60 or 100 c.c. Furthermore, remember always that you may have the meningococcus manifesting all of the conditions of an ordinary pus producing organism. In one particular case, that of an army nurse, the case was referred to my department for an antrum and ethmoid operation to relieve an acute arthritis. This nurse had swollen joints, high temperature, all symptoms of a septic arthritis. I had a blood culture made before the operation, though I operated before the report was received. The operation consisted of drainage of the antrum and curettment of the ethmoid cells. Relief of the sinus conditions was marked. The report from the laboratory showed meningococcus infection. Sixty c.c. of serum was given intravenously and repeated in 24 hours. Relief of the sinus infection and arthritis was almost immediate, and meningeal symptoms developed.

We had several carriers from whom we cultured positive meningococcus day after day for six weeks. These cultures were taken from a naso-pharynx and negative cultures were obtained only after I removed the tonsils and adenoids. This is reported simply as a matter of interest in dealing with chronic carriers.

Dr. Victor R. Small, Raleigh, N. C.

As Dr. McConnell has just said, you all know that in the fall of 1917 there occurred a number of epidemics and threatened epidemics of cerebro-spinal meningitis in the different military camps in the United States. At that time I was stationed at Camp Bowie, Texas, and we thought we had an epidemic there; however, it was not to be compared with the one at Camp Jackson. When it began we thought we were going to have a number of cases and made the best arrangements we could in order to take care of them. Every case that came in the receiving ward was examined by the receiving officer and if he found any symptoms of meningeal irritation, a spinal puncture was performed on that patient right then and there. The fluid was taken to the laboratory and we generally had a report from the laboratory in from fifteen to thirty minutes. If that case was reported as cerebro-spinal meningitis the patient was sent to the meningitis ward. It happened to be my lot, together with two nurses and several hospital corps men, to be quarantined in the ward for six weeks. During those six weeks twenty-five cases passed through that ward and of the twenty-five cases, twenty recovered with no apparent complications or sequelae except one case was left with a marked strabismus. Five cases died. Our treatment was intra-spinal administration of the serum. This was done daily, or, in some of the worst cases twice daily, and each time we withdrew from thirty to sixty c.c. of the fluid and administered that amount of the serum. I think the doctor is perfectly right when he says it is better policy to take out more fluid and give the patient more serum. Occasionally we had a case in which the fluid ran slowly or not at all from the needle, due to the extremely thick, purulent character of the fluid. This is generally indicative of the fact that there is not a free communication

between the ventricles and the subarachnoid space, and in order to alleviate this condition it is absolutely necessary to puncture and drain the ventricles. We generally find this in those maliginant cases that start in with a terrific headache and in which the patient becomes unconscious within the course of a few hours following this symptom.

Now, just one word more. The government furnished, or attempted to furnish, a serum which was prepared by the Rockefeller Laboratories. When we gave that serum we got the best results, but occasionally the supply would be exhausted and then we had to use a serum put out by some one of the commercial houses and purchased in the open market. The serum that came from one of these firms gave us results almost as good as did that obtained from the Rockefeller Laboratories.

That prepared by two other widely advertised firms was practically useless. Often it was contaminated with haemoglobin. This was never given unless absolutely imperative, we being unable to obtain any other at the time. When, from necessity, this serum was administered, there always followed, as would be expected, a violent reaction.

Dr. W. P. Whittington, of Asheville, N. C.

Just in connection with this paper, I would like to report a case that I saw on Jan. 26th. On the evening of the 25th, a young lady, a student of a business college, went to her home, taking with her some cheese, oranges and crackers. After arriving at her home she ate freely of the cheese, crackers and oranges, and made a dish of snow cream and ate freely of it. About two o'clock she awoke very much nauseated, and vomiting soon began, and continued most of the next day. I saw her on the early afternoon of the 26th, and found her still nauseated and suffering with severe pains in the head and back and a general feeling of depression and nervousness. Having the history of the cheese, etc., for supper, I supposed that she was suffering with ptomain poisoning, and ordered a free laxative, and returned next day to find her with a well-developed case of cerebro-spinal meningitis. As soon as I could get an assistant, I made a spinal puncture and as soon as I withdrew the stilet from the needle the intra-spinous fluid spurted out with considerable force, showing the extent of the intra-spinous pressure. We withdrew about 30 c.c. of the fluid and immediately allowed about the same amount of anti-meningitis serum (Polyvalent) to flow into the spine. The fluid taken from the spine showed the diplococcus intracellularis in abundance, which confirmed our diagnosis. Patient began to show improvement soon after the treatment, but we gave another 30 c.c. twelve hours after the first. A third dose was given twenty-four hours later, and the patient appearing better, and the spinal fluid being considerably clearer, we waited four days, and gave a fourth dose. After this the patient gradually improved, but continued to run a low temperature and had occasional nausea and vomiting, so we gave a fifth dose at the end of another week. On yesterday, Feb. 15th, I saw her and she is still running a low temperature, but the symptoms are very much improved and it looks like she might eventually get well.

March 23, 1921. The case reported above has been a typical one, having had an extensive purpura covering the entire body, with some very large patches and considerable blood in the urine. Her convalescence has been drawn out; relapses of the headaches, pains in the neck and nervous vomiting. Two weeks ago she developed a nephritis with considerable albumen, casts and swelling of the entire body. This has now about all cleared up but she still has some vomiting. The temperature is running near normal, and it looks like she might get well yet.

RADIUM THERAPY IN MALIGNANT AND BENIGN DISEASES.*

Samuel Orr Black, M.D.,
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Spartanburg, S. C.

According to Chas. H. Viol, in an issue of the Keystone, dated February, 1919, radium was discovered by Madame Curie, a Frenchwoman, in 1898 as a constituent of pitchblend, a black oxid of uranium, where the radium occurs as a disentegration product resulting from the slow transmutation of the uranium atoms.

*Read before the Tri-State Medical Society, Spartanburg, S. C., Feb. 16-17-18, 1921.

Viol further states that the amount of radium required for scientific work and therapeutic application soon outgrew the production possible from the available pitchblend, and early in this century, further sources of uranium were found in southwestern Colorado and in southeastern Utah in the carnotite ore deposits. In the pure form carnotite is a bright sulphur yellow and in the low grade ores, the yellow color gives an index as to the quantity of uranium present.

"Prior to 1914, quantities of high grade ore were shipped to Europe where the material was used for the extraction of radium. For this purpose, the ore contained not less than two per cent of uranium oxide and two hundred tons of ore of this grade contain only one gram of radium element."

The records show that the Standard Chemical Company of Pittsburg in 1913 was the first concern in this country to prepare radium from carnotite.

This organization and the Radium Chemical Company of Colorado now largely control the production, and with a corps of scientific men, they are preparing and marketing radium for commercial and therapeutic purposes.

In 1915, it was figured that only about 135 grams of radium were available from the carnotite mines and it was strongly agitated at that time that its use be limited entirely to medicine. However, early in 1919, more extensive prospecting revealed that the amount to be had more nearly totalled 500 grams and this sum suffices for both commercial and medicinal purposes.

Commercially, radium is useful as a luminous compound. When mixed with phosphorescent sulphide of zinc it glows in the dark and is useful on watches, clocks, push buttons, keyholes and other devices as pointed out by many manufacturers. For such purposes almost infinitesimal amounts of radium are necessary.

It is estimated that up to the present time there have been mined but 55 grams of radium. If this be true then there is one gram already on hand for every 2,125,454 persons in the United States. Or again, there is one milligram for every 2,105th person, or if 50 mgs. be taken as an ordinary working unit, for practical purposes, then there is one unit for every 105,250 persons.

In all the large institutions of this country and in Europe, where there is owned as much as one gram or more of the radium element, physicists have instituted apparatus for the purification and collection of the emanation to be used instead of the radium element itself.

The emanation acts therapeutically in identically the same manner as does radium itself, though it disintegrates one-half full strength in 3.85 days, and in another 3.85 days, one-half of the remaining emanation will have decayed, and so on until at the end of 30 days, it will have completely disentegrated or disappeared.

Radium emanation was discovered in 1900 and is a radio-active gas of three different penetrating powers and properties.

Its medicinal usefulness depends entirey upon these gases or rays, called by physicists alpha, beta and gamma, the first named being the so-called soft rays, and the last named the so-called hard or penetrating rays. It is claimed that the latter are the ones particularly useful in deep seated malignancies.

An apparatus for the collection of the emanation costs more than three thousand dollars ($3,000.00) and when the gas is purified it is eventually collected in glass ampoules or cylinders and sealed at each end to prevent escape.

Such in brief is the history of radium up until the present.

During the past nine months in the Spartanburg Hospital, we have treated sixty-one patients with radium itself. These patients were given collectively 9,494 milligrams, totalling 125,403 milligram hours.

Of the total number of patients treated, forty were for malignant and twenty-one were for benign conditions.

The time elapsing is entirely too short to even approximately judge the end results as regards a cure in the malignant conditions, yet, we can say that every patient, save three, showed a decided temporary improvement. One of these was a far advanced carcinoma of the cervix with an extensive pelvic mass and she died three weeks after the initial exposure.

The second exception was a carcinoma covering the entire forehead with destruction of all the soft parts down to and involving the bone. To date,

she has manifested no improvement whatsoever.

The third exception was a case of sarcoma involving the right lower chest wall in which the growth had attained the size of a grapefruit without ulceration. Despite vigorous and repeated doses given externally as well as by buried radiation, there was absolutely no decrease in the size of the mass and the patient died within four months after her first treatment.

Of the total number of malignant cases, four were carcinomas of the tongue and floor of the mouth, three were carcinomas of the breast, six were carcinomas of the cervix, six were epitheliomas of the ear and face, four were epitheliomas of the lip, six were epitheliomas of the cheek, and two were sarcomas of the jaw, one was a sarcoma of the chest wall, one was a carcinoma of the chest wall, and there was one each of the nostril, forehead, nose and orbit; one was a sarcoma of the right upper lip, one a carcinoma of the rectum, and one a lympho-sarcoma involving the cervical axillary, mediastinal, and inguinal glands.

Of the benign cases, eight were fibroids of the uterus, three were cases of distinct hyperthyroidism, two were cases of leukorrhoea, and there was one gumma of the clavicle, one case of tuberculous peritonitis, one was for callous formation following injury to the foot in the late war, one a wart on the lower eyelid, one a good sized hemangioma involving the left trapezius and occipital muscles, one was a mole on the cheek, one was a case of tuberculous cervical adenitis, one a hemangioma on the nose of an infant, and one a chronic leg ulcer.

It is a pleasure to state that all eight fibroids have apparently been cured, the hemorrhages have ceased and the growths are smaller.

The three cases of hyperthyroidism have shown improvement in their symptoms and in the cases of leukorrhoea, the discharge has subsided in both instances.

It is interesting to note that the gumma at the right sterno-clavicular joint softened in a few days after a single exposure of five hundred milligram hours. It then suppurated and dishargced at the end of ten days. Antiluetic treatment had almost healed the lesion when we last say the patient. This exposure was given to see just what would happen to the gumma.

The case of tuberculous peritonitis was first operated and then radiated through the abdominal wall, which was very thin. The patient has gained thirty-five pounds in weight and she says that she feels well for the first time in three years.

The callous on the bottom of the foot in the soldier has only had one exposure and he is still under observation.

The wart on the eyelid is disappearing.

The hemangioma on the back of the neck has entirely gone and insufficient time has yet elapsed to state the result in the case of the tuberculous glands of the neck and the hemangioma of the nose in the infant.

The chronic leg ulcer improved temporarily, then retrogressed, at which time it was excised and later skin grafted. The grafts lived and the ulcerated area has remained healed.

The one case of pruritus vulvi herein reported had suffered from this horrible condition for three years. She has had both a vaginal and an abdominal operation for relief from the torture. Needless to say neither of these helped her. The condition grew worse and so frequent and violent did she itch, and so often and vigorous did she scratch, that it became at times impossible for her to even be in the company of her friends or neighbors. She was given two hundred milligram hours of radium on two separate occasions with a three-day interval. Two weeks later she returned to the hospital, asking for more radium, and stating that if she continued to improve as she had since her last treatment she would soon be entirely well. This case will be reported more fully at a later date.

Individuals handling radium do so with a certain risk of injury to their hands and fingers. Unless caution is exercised, gloves worn, and the tubes containing the radium handled with forceps, a radium worker is liable to experience loss of sensation in the affected or exposed parts, the finger tips will crack, the nails will fall off, and occasionally the lesion will go on to ulceration.)

However, epithelioma does not occur as it is prone to do after repeated X-ray exposure.

In institutions the nurses are changed every sixty days as a precautionary measure.

As just stated, radium does not in itself cause malignancy, though if insufficiently radiated, or occasionally if a malignant area be over-rayed, the lesion will be stimulated to rapid growth, and, in consequence, extensive and early ulceration will ensue.

The three great underlying principles in radium therapy are first, the distance to place the radium from the affected part, second, the screenage to be used, third ,the correct dosage, implied in the amount of radium used and the duration of the exposure.

Radium, if improperly timed and screened, will surely cause erythema, blisters, vesication and ulceration, slight or extensive, though the ulcer so formed will always eventually heal. Prolonged or frequent radiation will cause hair to fall out, and eye lashes to disappear. Occasionally after ulceration, or severe blister formation, a scar will result when the wound has healed and this will be unsightly due to the loss of the normal pigment.

Radium can be as safely used near the eye as it can elsewhere In fact, certain kinds of cataract are now being treated by radiation with good results. Warts and epithelioma involving the lid are readily removed by proper dosage and screenage with impunity to the eyeball.

Birthmarks on the face of infants and children disappear with surprising rapidity, with no resulting disfigurement when radium is used. Lymphangioma and hemangioma, even when extensive, multiple and large, are very susceptible to its action, but less so after maturity has been reached.

Cancer of the tongue and mouth and cancer of the rectum are as resistant, if not more so, to its action than is cancer in almost any other region of the body.

Cancer of the buccal cavity has shown but little tendency to remain in even an improved state following radiation. However, even here the pain and discharge are lessened and the rate of the growth is apparently retarded for the time being.

Janeway in New York has recently used small capillary glass tubes containing a very small amount of radium emanation by burying them in the substance of the tongue or in the growth. Should one of the tubes come to the surface, the individual will detect its sharp point and it is easy to then extract. He states that carcinoma of the tongue has shown more improvement with this technique than under any other yet devised.

It seems to us that the future of radium therapy is well assured. Though it is not an absolute specific for malignancy, yet so potent is it as an ameliorating agent, if nothing more, that it is almost a synonymous term with cancer. For advanced inoperable malignancy, it is the one treatment par excellence.

Irrespective of its action on cancer, there remains a very large field for its use and application in improving and curing benign conditions.

Chronic eczema, pruritus (some cases of idiopathic origin), Kraurosis Vulvae. Keloids, warts, fibroids, myoma, myositis, ossificans, painful and unsightly scars are all readily amenable to its rays, being either rapidly cured or else greatly improved.

Hyperthyroidism, spleno-medullary leukemia, pernicious anemia, tuberculous adenitis, tuberculous sinuses, lupus vulgaris and even lupus erythematosus are other well known benign conditions in which splendid results have been obtained.

Heyward Pinch at the Radium Institute at London, reported excellent results with radium in the treatment of keratomas, Fordyces' Disease, Xanthoma palpebarum, Xeroderma pigmeantosum; and with radium emanation solution of a strength not less than 1.5 millicuries per litre he has obtained marked benefit in selected cases of arthritis deformans where fibrous as distinct from ossious changes predominated.

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Original Communications

OVARIAN CYST IN FOUR-YEAR-OLD CHILD.*

Dr. L. A. Crowell, Lincolnton, N. C.

My excuse for reporting this case is not because of the rarity of Ovarian Cysts in children but from the association of the enlargement of the breasts, the appearance of hair on the pubes and in the axilla and appearance of menstruation in connection with same.

I find in looking up the literature that Ovarian Cysts are not so rare in children as I thought before beginning this investigation. I note at a meeting of the Chicago Gynecological Society of Jan. 16, 1921, Dr. Mark Goldstine reports a case of an Ovarian Cyst with a twisted pedicle in a child of 12 years and 9 months. Again I notice Dr. William A. Downes, at a meeting of the New York Surgical Society, on Oct. 13, 1920, presented a specimen of an Ovarian Cyst from an infant of 7 months. Cyst contained 2½ litres of fluid. Downes in the same connection says that Bland Sutton reported sixty cases of tumors of the ovaries in children under fifteen years of age. However, he did not state whether these were solid or cystic tumors. In this group the youngest case occurred in a child of one year and eight months old.

The earliest time a swelling was noticed in any case of this series was four weeks after birth. In the case reported by Downes the swelling was noticed at the time of birth. In none of the cases that I have found in the literature has any reference been made to the association of enlargement of the breasts, the presence of hair on the pubes and axilla or the appearance of the menses been mentioned. It was once thought that there was a direct nervous connection between the mamma and ovaries. Recent experience, however, has exploded this theory.

The following quotation from Graves Surgery is conclusive proof to my mind of this fact.

"Basch injected placental extract into virgin bitches, and found that it produced no changes in the beasts. He then implanted the ovary of a pregnant bitch in the abdominal wall of a virgin animal, and produced a hypertrophy of the breast. He next injected placental extract into this animal, and produced such an extensive secretion of milk that she was able to suckle a litter of young dogs.

This experiment suggests that the complete cycle of mammary hypertrophy and milk secretion is dependent for its full expression on both the ovary and the placenta."

Beatrice Proapes was four years old in May, 1920; mother and father living and well; nine other children, well and normal, she being the youngest child. She has never had any serious illness, in fact has been perfectly well all her life. About the first of September, 1920, she had vaginal discharge of blood, this has occurred every thirty days since that time. At the same time her parents noticed that her breasts were beginning to grow. They consulted Dr. Dula, the colored physician of Lenoir, and as he found no other abnormality he did not prescribe any line of treatment.

About the middle of November, 1920 her parents noticed that her abdomen was larger than it should be. In fact, the child grew more rapidly from the first of September to the middle of November than children of her age grow. Her abdomen continued to get larger until about two weeks ago when the family called in Dr. Dula again, who made the diagnosis of an abdominal tumor, possibly an Ovarian Cyst. The case was then referred to me for observation and treatment. The following are the notes and findings taken in her case on arrival at hospital on February 7, 1921.

Child is large for one of her age. She appears somewhat bashful, looks strong and healthy, conjunctiva and lips red; general expression of face is that of one

*Case reported before Mecklenburg (N. C.) County Medical Society, Charlotte, N. C., March, 1921.

in perfect health. Examination of neck shows no enlargement of thymus or lympathic glands; heart and lungs, neg-

ative. Breasts are as large as a girl of sixteen. Abdomen symmetrically enlarged, measurements of which are as follows:

Kerley gives as the average length of girls 5 years of age 4 ft. 1.4 ins.

Full length of child, 49½ ins.

Cir. of chest over mammary glands, 25 ins.

Cir. of abdomen at ensiform cartilage, 28 ins.

Cir. of abdomen at a level with the umbilicus 28½ ins.

Cir. at pubes, 24 ins.

The pubes and axilla were covered with hair.

The index finger can be easily passed into the vagina. Cervix is soft, especially the anterior lip which resembles the cervix of a pregnant uterus very much. During the examination of the uterus a small amount of thick mucus streaked with blood escaped from the vagina.

Examination of urine, negative; Hb. 70% ; LC. 8,000.

From the history of the case and from the physical findings we were forced to believe that there was some kind of tumor formation which originated in the pelvis and which involved the ovaries, and this exaggeration of ovarian function has caused the precocious development of this child. With this idea in view we made a three-inch incision in middle line of abdomen, beginning about one inch below the umbilicus. When the peritoneal cavity was opened an examination revealed the presence of an ovarian cyst which was found anchored at the right horn of uterus. The fluid was drawn off from this cyst by means of gall bladder trocar. The sac was then removed through the incision in the usual manner. The uterus was found to be about the size of a normal non-pregnant adult uterus. The left ovary and tube were normal. The wound was closed up in the usual manner without a drain. The fluid was measured after operation and was found to be one gallon and 11 ounces. The cyst with the fluid weighing 12 pounds.

The only regret I have in the case reported is that I did not have a pathological examination made of the tumor. In an article in the A. M. A. of Feb. 12, 1921, by Dr. William A. Downes, reporting the case of Ovarian Cyst in the child of seven months old, referred to above, I note that in studying the pathological reports in twenty-six cases reported since 1904, that 62% were classified as malignant and 38 as berign. Owing to the fact that there was no interference with the nutrition of this child, and from the general appearance of good health taken in connection with the microscopical appearance of the tumor, I feel rather confident that it was a simple cyst.

USES AND ABUSES OF PITUITRIN.

By W. B. Allums, M.D., Ringgold, La.

During my early student days I was deeply impressed with the classical therapeutic indications of the various therapeutic agents offered by text books and instructors of that time. The study of digitalis, with its never failing effect upon the heart, presented one of the many vivid pictures that we hoped to reproduce in the future application of the various remedial agents.

In my twelve years of active practice of medicine I have not only failed to observe these wonderful results of a classical character, but have learned from the cruel lesson of experience that only a few remedies are always dependable especially in the time of greatest need. Pituitrin can justly be mentioned as one of the most prominent in this small group of worthy therapeutic agents. If this preparation is fully potent and properly administered it will seldom fail to give the desired result.

In referring to the uses of Pituitrin it is needless to mention the various preparations of the pituitary body, such as the desiccated extracts of the anterior and posterior lobes, or to know whether that peculiar and little understood element that gives Pituitrin such a wonderful effect is histinin or some other proteolytic substance.

There is an aqueous extract of the anterior lobe called antuitrin that seems to be giving very good results in suppressed menstruation of a functional character, obesity with infantile sexual organs, imbecility and general maldevelopment.

The method of administering Pituitrin is very important. The gastric juice seems to digest or alter its effect, although some claim to get fair results by giving as high as 3 or 4 c.c. per mouth. Prof. Halsey, of Tulane University, conducted an exhaustive study of Pituitrin administered by mouth with little or no results observed. The only dependable method is to give it deep in the muscles of the hips or arms, being careful that no alcohol comes in contact with it either in the syringe or on the skin. The sublingual method is no doubt next to the intramuscular and can be used without any fear of irritating the most delicate mucous membrane.

It has a decided effect upon the circulation. There is a raise in the diastolic pressure, slowing of the pulse, and has been used with success in combatting collapse and shock. It is also claimed to increase the coagulability of the blood. The Germans use it freely in low blood pressures of peritonitis, pneumonia and diphtheria.

Given in large doses, it stimulates the muscle fibers of the intestines, and is quite a favorite in preventing and treating tympanites following abdominal operations, given with or without an enema. I have used it several times in cases of so-called paresis of the bowel where I was unable to get a passage, giving the double strength or Pituitrin Surgical a few minutes before a large enema.

In bronchial asthma I have used it successfully in several cases and recall one case, a girl of eleven years, had a good night's rest after giving ½ c.c. at bedtime. Lately the use of equal parts of Adrenalin Chloride and Pituitrin has been followed by flattering results, getting a longer period of relaxation than by using the Adrenalin alone, and with less discomfort to the patient. Have never used it in edema of the lungs but theoretically it should be of some service.

Pituitrin has a marked diuretic effect on the kidneys. Two cubic centi-meters was administered to a patient intravenously. With the ureters catheterized the urine was seen to increase from five drops the first minute to 52 the second, 62 the third, 28 drops at the end of five minutes, and gradually dropped down to six drops at the expiration of forty minutes. This diuresis is said to be due to the increase of blood pressure. Strangely, on the other hand, in cases of polyuria from diabetes insipidis, it will reduce the quantity of urine one-half, and given at bedtime will allow your patient a better night's rest, and several cases have been reported cured by four or five doses given at semi-weekly intervals. Have used Pituitrin in ten cases of eneuresis above five years of age with a cure reported of 60 per cent. Have been disappointed in giving it for retention of urine following hemorrhoidal operations and prolonged labor cases. This was probably due to extensive trauma involving structures surrounding bladder or urethra.

Pituitrin is now recognized as one of the most valuable agents used in obstetrical practice. Its action on the uterus was discovered by Dale in 1907. W. B. Bell, in 1909, first used it in labor, but it became better known as an oxytocic when Foges and Hofstatter carried out their study of sixty-three cases of atony of the uterus, noticing that in from two to eight minutes after giving it intravenously a strong contraction took place lasting from 30 to 40 minutes. The comas of eclampsia offer a positive indication for Pituitrin, and generally a hurried delivery can be obtained. A second stage of labor lasting over five hours endangers the child to asphyxia or cerebral compression. The mother may become exhausted and vaginal fistulas may result. A careful investigation of the foetal heart sounds should be made, and when it becomes slow or irregular, indicating an asphyxia, Pituitrin should be given immediately.

The timely and judicious use of Pituitrin in these cases will usually carry them through to a successful termination of labor that, otherwise, would have required a forceps delivery. The frightful and disastrous results that frequently follow the use of forceps are too well known to be considered at this time.

In discussing the uses and abuses of any well established therapeutic agent, the misuse or abuse of it would appear to present the most important factors for consideration.

Rupture of the uterus occurred before the days of Pituitrin in one in 3,400 reported cases. Since its general use in obstetrics some estimate it one in eight hundred, thus it is reasonable to think that the improper use of Pituitrin might be a factor.

The abuse of Pituitrin consists of its administration where it is contra-indicated. It does not require any extraordinary knowledge of therapeutics or obstetrics to be able to determine how, when and where Pituitrin should be given, as the indications or contra-indications are usually very easily recognized.

Hydramnios, hydrocephalus, multiple pregnancies or contracted pelvis should at least be anticipated. If present, they offer a warning against the use of Pituitrin. Scars on the uterine wall or abdominal scars indicating Cesarean sections are signs for precaution.

Probably the greatest offense against Pituitrin is its administration in cases that have progressed slowly but normally, where the physical condition of the patient offers no distinct contra-indication except the soft parts have not made sufficient dilatation to complete labor. The only excuse a physician can give for administering Pituitrin in such cases is to shorten the time necessary for attending the patient. The injection of repeated doses of Pituitrin under such circumstances, especially to a primipara, is not only cruel but criminal. It is just this use of the agent that causes laceration to the perineum, pelvic fascia or the cervix. Unless these conditions are promptly and successfully repaired, lasting and troublesome conditions, such as chronic discharges, ulcerations, repeated abortions, sterility, reflex disturbances and possible malignancy are almost certain to follow.

Just a short time ago I was called in to see a primipara of 28 years who, a few days prior, had been delivered in five hours from the beginning of labor by a full dose of Pituitrin. The special reason for calling me was to relieve her of what was thought to be a severe diarrhea after taking the usual post partal purge. The fact was she had an almost complete laceration of the perineum, and was unable to control the bowel movements. Infection soon developed and the patient is now practically an invalid.

On two different occasions in my own practice, and once in consultation with a doctor friend, I observed fecal vomiting from giving Pituitrin and an enema at the same time. This was not simply vomiting a small amount of brown fluid, but a reverse peristalsis with an enormous amount of fecal matter. This occurred only once in each case. Neither case had an obstruction and all recovered.

Ill effects on the child have been reported, but cannot recall a case where I thought Pituitrin ever hurt the baby, but have seen lives saved by its use. My brother and I have had an average of one hundred obstetrical cases for the last eight years and have used forceps twice during these eight hundred deliveries. I consider the obstetrical outfit incomplete without a supply of fresh Pituitrin and chloroform. Seldom ever give over ¼ c.c. and that at time of complete dilatation. Have given, how-

ever, small doses frequently repeated in a few cases of dystocia, first stage, together with manual dilatation with gratifying results.

Incomplete abortions also offer a splendid opportunity to prove that Pituitrin is one of the most valuable therapeutic agents of this age and a God-send to the parturient mother.

THE TREATMENT OF URETHRAL CARUNCLE.

John B. Haskins, M.D., Chattanooga, Tenn.

The varied and often unsatisfactory treatment of urethral caruncles and the high percentage of recurrence after their removal led me to search the literature for the best methods of dealing with this pathological condition, and the best method of removing them.

The symptoms of urethral caruncle most frequently complained of are urinary frequency, pain and burning on urination, soreness around the meatus, tenesmus, and bleeding. The nervousness, which is a symptom in most of these cases, is unquestionably due, in many instances, to the constant irritation in the urethra, since it disappears as soon as the caruncle is removed. In other cases, the nervous symptoms are independent of the caruncle since they persist after its removal In many instances the inconvenience and suffering seem so out of proportion to the size of the caruncle, that it is often overlooked as the cause of the trouble.

I think all authorities have agreed that urethral caruncles are secondary to a chronic irritation or ulceration of the urethal mucosa. Some observers have attributed caruncles to the gonorrheal type of chronic urethritis following directly on gonorrheal ulcerations. The bursting of the retention cysts of Skene's glands has also been considered a cause. It is probable that chronic irritation from many different causes plays a part in their formation.

Pathologically, urethral caruncles are of papillomatous outline with either a broad or narrow base growing from the posterior or lateral walls of the urethra just inside the meatus. I have found only one case of caruncle on the anterior wall reported in the literature (Neuberger). These growths vary in color from yellowish gray to bright red, but most usually a dark cherry red. Often acute inflammation of the anterior portion of the urethra and tissues surrounding the meatus renders the whole area exquisitely sensitive. Grossly, differential diagnosis of urethral caruncle and urethral cysts, fibromas, prolapse of the urethral mucosa, and malignant growths is often difficult; the microscopic findings, however, are characteristic, showing them to be of a uniform structure, composed of loose connective tissue permeated by numerous blood vessels which are often much dilated. The growth throughout shows marked inflammation, and is infiltrated with mononuclear and polynuclear leukocytes. Many plasma cells are found, especially surrounding the blood vessels. Toward the free surface the blood vessels are newly formed. The growth is covered by the usual urethral epithelial layer which in areas is thinned out or absent, leaving an easily bleeding ulcer (McCarty).

Some authors have reported malignancy as high as 25 per cent in the original caruncle and many malignant recurrences. I have not seen a case of malignant recurrence, however, all specimens should be saved and examined microscopically, and the malignant cases dealt with radically.

In reviewing the literature on urethral caruncle, I find that the removal of these growths has been advised by such methods as excision, actual cautery, various caustic acids and high frequency current. Most articles record the fact that a recurrence is frequent and with it a recurrence of the original symptoms.

Crenshaw of the Mayo Clinic has divided the recurrences into two classifications which seem the most scientific classifications: First, true recurrence of the caruncle due to incomplete removal of the base, and second, prolapse of the mucous membrane of the urethra due to the contraction of the scar following the removal of the original caruncle. The majority of so-called recurrences belong to the prolapse group; they involve a portion or all of the circumference of the urethra proportionate to the extent of the original scar. A removal of this prolapse by any method merely results in a larger scar in a repetition of the prolapse. Crenshaw says: "We have seen several cases following removal of a caruncle

and subsequently repeated removal of prolapsed mucosa in which the mucosa of the trigone was dragged down into the urethra and even protruded from the meatus."

Treatment—If the caruncle involves the entire posterior and lateral walls of the urethra I think removal is most likely to be followed by prolapse of mucous membrane and return of symptoms, a condition that is rarely if ever cured. This type is best dealt with by the application of a caustic as nitric acid or if possible one or more radium exposures, for the most common type where the caruncle comes from the posterior or lateral wall of the urethra I think the Brash-Crenshaw method is the method of choice which is as follows:

1. The patient is placed in the lithotomy position, the parts are thoroughly cleansed with soap and water. A swab of cotton on a toothpick saturated in 10 per cent cocaine solution and lubricated with a soluble lubricant is inserted into the urethra and left for ten minutes.

2. The labia are separated by an assistant On examination the caruncle is found to consist either of a single tag on the posterior wall or of posterior and lateral masses. Each tag is picked up with a small fixation forceps and clamped off in the long axis of the urethra with a special clamp which has a broad blade and a narrow crushing edge. Care is taken to include in the bite all the caruncle and none of the submucosal structure of the urethra.

3. The growth is cut off close to the upper surface of the clamp; the crushing of the pedicle prevents all bleeding and makes an accurate removal possible. The specimen is saved for microscopic study.

4. The cut-surface is thoroughly seared with acid nitrate of mercury solution applied with a wooden applicator. An excess of the acid to run over the blades of the clamp and cauterize other areas of the urethral mucosa is cautiously avoided.

All tags are removed in the same manner; when removal is complete one or more narrow longitudinal white lines about 1 cm. by 1 mm. mark the cauterized tissue; these lines are separated by normal mucosa. Within a week all evidence of the operation disappears. The advantages of this method or removal of urethral caruncles are:

1. The entire growth can be removed at a single operation.

2. The operation can be done without pain under local anesthesia.

3. Bleeding does not obscure the field during the operation nor annoy the patient afterward; the operator may be sure, therefore, that all the growth has been removed and recurrences thus avoided.

4. There is a minimum of scar tissue since there is no sloughing as the destruction of tissue is absolutely under control. The small amount of scar tissue remaining is in longitudinal lines and separated by islands of healthy mucosa so that a postoperative prolapse of the mucosa due to contraction of the scar does not occur.

5. The specimen removed is not destroyed and may be sectioned for microscopic study.

DIRECT INGUINAL HERNIA.

H. H. Kirby, Surgeon,
St. Luke's Hospital, Little Rock, Ark.

To appreciate the real significance of a correct procedure for the cure of the direct inguinal hernia, one has only to study the transversalis fascia forming the posterior wall of the inguinal canal. This fascia is formed by two layers: First, an anterior layer formed by and directly continuous with the lower border of the transversalis muscle, having resulted from the arching of the transversalis muscle in its development, these fibers being tendinous and normally remaining attached to the inguinal ligament (Pouparts lig.), and second, a posterior or true transversalis fascia, forming the interfoveolar ligament and the almost vertical fibers arching downward and laterally from the lateral border of the rectus muscle and becoming continuous with the lateral fibers which are attached to the inguinal ligament and which are derived from the interfoveolar ligament. In some cases there is also found a weak muscle in the region of the interfoveolar ligament known as the interfoveolar muscle. From this description, it is readily seen that there is an area covered only by the tendinous fibers derived from the transversalis muscle and practically un-

protected by true transversalis fibers and lying between the two vertical portions of the true transversalis fascia mentioned above. It is at this location that a direct hernia usually makes its appearance, the inferior medial and lateral margins of the opening being formed by true transversalis fascia. The upper margin being of arched tendinous fibers derived from the transversalis muscle. The purpose of procedure, viewing the region from this anatomical state, must be to make the fibers in this region reinforce each other as they are found to do in a normal individual. The following is the method in detail describing the operation:

1 An oblique incision including the skin and subcutaneous tissue from the pubic tubercle to within an inch of the anterior superior iliac spine.

2. An oblique incision of the external oblique aponeurosis in the direction of its fibers over the inguinal canal, being careful not to include the fibers immediately around the external abdominal ring unless same be markedly stretched.

3. Separation of the fibers of the cremaster muscle will then bring the hernial sac composed of transversalis fascia, extra peritoneal fat, peritoneum and sometimes part of the bladder wall into view.

4. It is at this stage in the dissection that the fibers surrounding the hernial sac at or near its neck should be grasped with the forceps, at the same time dissecting the attenuated layer of the fascia from this margin.

5. The sac is now opened, contents replaced into the abdomen, extra peritoneal fat and bladder if it be included in the wall of sac are now separated from the peritoneal pouch.

6. The peritoneal sac now freed is closed in a manner most suited to the case, care being taken to avoid producing peritoneal tension.

7. The layer of extra peritoneal fat should now be brought over the closure in the peritoneum to prevent adhesions between the peritoneum and the overlying transversalis fascia and also to form a buffer which will distribute intra peritoneal pressure rather than allow it to come at one point.

8. Interrupted sutures are now inserted which draw the lower margin of the opening in the transversalis fascia underneath the upper margin, and reattach the arched tendenous fibers to the inguinal ligament. Under no circumstances should the sutures be so placed as to draw the interfoveolar ligament medially and cause an opening of the internal abdominal ring as this would result in a tendency to an oblique hernia.

9. The cremaster and external oblique muscles are now closed with continuous sutures. If the external abdominal ring be large it may be lessened in size. However, as a rule it is better to leave it alone since it has a tendency to resume its normal state

10. Scarpa's fascia should now be sutured to prevent the stiffness so often complained of following operation for hernia.

11. The skin incision being closed in the usual way completes the operation.

The contention that poor development of muscles in this region contra-indicates operation is not well taken.

1. Because normally there are no muscles over this area which are designed to prevent its formation. For in studying the muscular structures in this region the transversalis muscle will be found to form entirely the lower border of the arch over the area and to form the lateral border of the conjoined tendon, the lower border of the internal oblique will be found to become continuous with the cremaster muscle and to form the medial part of the conjoined tendon. The significance of this observation is that they do not enter into the protection of the posterior wall of the canal except at its medial part where the conjoined tendon is found. It will be shown later that this tendon itself does not hold against a hernial formation.

2.A muscle should and normally does have an unrestricted action and always has a fascial protection to bring this about. To tie down a muscle and restrict its action causes it to exhaust itself and to undergo a fibrous degeneration. Hence a consideration of the weakness or strength of the muscles in this region should not determine the procedure.

3. In the healing of fascia a result is brought about within two to three weeks, while with muscles two to three months are required to bring about a strong result which shows the absurdity of using the muscles for such a means of correction.

4. Granting that the muscular development be found poor in the case of a small hernia, it would be necessary to operate in order to prevent strangulation such as may occur, and is often inadequately held back by an external support.

5. Granting again that the muscular development be found poor, and by recognizing that the peritoneal pain in small potential hernias is greater, when straining due to tension and irritation, in my opinion, it is imperative that this area be strengthened.

6. What individual cares to wear an external support all his days, the only other alternative.

The tendency for the production of these hernias is brought about by a forward tilting of the pelvis which has a tendency to draw in the upper abdominal muscles and to increase intra-abdominal pressure below. This accounts for the appearance of these hernias in certain occupations with a predisposition to sedentary habits. The few symptoms complained of in this class of patients is due in many cases to the gradual stretching of the peritoneum without producing enough irritation to cause even an uneasiness, except during some active straining when an acute pain may be elicited, which is due in the largest per cent of cases not to a viscus being caught but to parietal peritoneal irritation, because of insufficient support for it.

Occasionally there is an indirect hernia in connection with the direct, the two sacs being separated by the interfoveolar ligament which overlies the deep epigastric artery. It must be remembered that there is a medial deviation in the opening of an indirect hernia, with a tendency to as straight a line of intra abdominal pressure as is possible, and to the production of a seemingly direct hernia which could be classed as one so far as its direction of force is concerned. The fact of this medial deviation especially must be kept in mind when correcting a combined type and it is for this reason that the correction of the direct hernia must not draw the interfoveolar ligament medially but rather that the opening for the cord be placed laterally. Since sometimes there occurs a direct hernia following the operation for an indirect hernia, a careful examination as to the strength of the fascia over the so-called unprotected area should be made. No one is justified in closing an indirect hernia without first making such an examination. I have on many occasions found a marked weakening of this area while operating on an indirect hernia.

As mentioned above, there is another type of direct hernia occasionally seen which appears at the lateral border of the rectus muscle. In studying the transversalis fascia in this region it will be seen that there is normally a thickened formation of it, fibers of which run from above downward with a slight inclination laterally until they become continuous with the lateral fibers of the transversalis fascia directed medially and attached to the inguinal ligament (Poupart's ligament). It is due to a failure of normal development of these fibers which accounts for the occasional presence of these small hernias in this region and which is another evidence that muscles do not hold back hernias, but that it is due to the poor development of the fascia instead, because it has to go through the thick conjoined tendon in this region. The same principle may be applied to hernial development and correction as is found in the homely illustration, if you want to hold a cow catch her by the horns and do not give her any rope to get a start. In other words do not get off at a distance by attempting to utilize the more superficial strength while ignoring the fascia which is the first and only layer to hold back the hernia in this region.

The closure of these small hernias is best brought about by overlapping the transversalis fascia.

I do not believe one is justified in dissecting up a portion of the anterior sheath of the rectus and attaching the same to the inguinal ligament anterior to the conjoined tendon and muscles. However, if it should become necessary to use this, it should be placed posterior to the fascia in this region.

"Florence, S. C.,
"February 17th, 1921.

"Dr. J. K. Hall, Secretary Tri-State Medical Association, Spartanburg, S. C.

"Regret exceedingly my inability to be present today. Best wishes for fine meeting.

"F. H. McLEOD."

SOUTHERN MEDICINE AND SURGERY

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M. L. TOWNSEND, M. D.
J. C. MONTGOMERY, M. D. } *Editors*

CHARLOTTE, N. C.

"Read not to contradict and confute, nor to believe and take for granted, nor to find talk and discourse, but to weigh and consider."—Francis Bacon.

"A SPIRITUAL DEATH."

General Smuts, pondering the despairing conditions of war wasted Europe, uttered this rememberable phrase, "A Spiritual Death."

One cannot think that this man, coming with clear eyes and a fresh outlook from the wide and silent spaces of the African veldt, had in mind any theological definition of spirituality. Obviously, to him the situation meant the disappearance from the lives of men of intellectual responsibility, of soul guidance—of the mandate and inspiration of the unseen. He saw the disappearance of those intangibles that are the very warp and woof of being, that defy definition and escape analysis. Upon such subtle qualities, society and civilization depend. These having disappeared there is either a spiritual death or what we prefer to call a suspension or arrest of the spiritual life of nations.

This startling figure serves to focus attention sharply upon the saddest and most dangerous manifestations of the aftermath of war. The debauchery of the nations, after long intoxication with the fiery draughts that were mixed by death and despair, has eventuated in stupid coma, mistaken for the spiritual death, but from which we confidently expect there will be a resurrection.

With this coma the masses are affected. Some there are, hardier and hardened by suffering, who seek in the adventures of crime, the baneful drug that will give false thrill and momentary zest to life, now that the stimulant of battle is denied. Others again, timid of soul, are in search of the narcotic that may still all desire and numb the sense of loss. On the one hand is insane revolt, embittered, useless and hopeless. On the other the movement of the fearful and weak, seeking only the peace that is in inaction and the absence of responsibility. The one is hardened, reckless and flauntingly destructive, while the other would weaken the forces that would preserve a social sanity and bring the world to an increased righteousness and a larger justice. The one has its showings in criminal epidemics, while the other is evidenced in a mental and moral lethargy that would unresistingly accept spiritual slavery.

Of all times now is the one time when mankind should look more and more toward the better and nobler things of life. At this time every care should be given, in the spirit of Christian teaching, to resurrect the infinite and tremendous meaning of existance

Prolonged coma leads to death and every day adds permanent injury.

This does not mean more laws, for with laws the country has run rampant. The statute books are crowded with all manner of absurdities and all the while the mills grind merrily on. The would-be reformers are going to make men good, nolens volens, according to pattern, and by legal command or prohibition, with never a doubt but that the chosen pattern will miraculously fit an infinitely diverse humanity. Laws are proposed to regulate the comings and goings of the individual on Sunday but with never a notice of his journeyings or his gait the other six days. It is designed to fix the height of shoe heels, the altitude of skirts, the texture of hosiery and shirts, the use of tobacco and of complexion beautifiers, and a myriad other things which God left to the choice of the individual. But as for the real conduct of life—the essentials of morality and justice which underlie all human relationships—these do not enter in.

MANDATORY REFORMATION.

In the current of the tide of reformation these later days there continues to be much said and written about physicians prescribing in the name of medicine certain products which come under the classification of alcoholic beverages. Statutes have made mandatory certain reforms and in forbidding the abuse of alcoholic beverages there has come also the prohibition of its use. A deplorable number of individuals were accustomed to its abuse and a still larger number accustomed to its use. To these individuals prohibition was not and is not acceptable, hence strenuous effort is made to evade the law and obtain in some way some form of alcoholic beverage. Failing in all other ways the fire of the entire campaign is focused on the physician. The physician then, whether he wills it or not is made the buffer — the go-between — between the prohibitionist and anti-prohibitionist.

The physician is human and comes from the same ancestry in the same childhood environment as did the lawyer, preacher, farmer and teacher. Some physicians want liquor and some do not. Some who want it, because they want it argue its medicinal virutes. Some who do not want it, because they do not want it argue its baneful effects on mankind. Backing up the doctor who wants it is that great army who are like him while backing up the doctor who does not want it is that other great army who are like him. Thus the medical profession is compelled to act and acting it is, some on one side and some on the other. Just as the user has said "This is a free country and I'll drink if I want to," so one class of doctors say "No one has a right to tell me what I shall prescribe." How obvious it is that becoming a doctor did not change his human nature in the least. How obvious that the pros and cons in the profession are actuated by the same motives as those out of the profession.

The combined knowledge and experience of the masses should determine what laws governing the individual are best for the whole.

The combined knowledge and experience of the medical profession should determine whether products with alcoholic content are a greater menace than good. In this way and in this way only can individual prejudice and selfish motives be eliminated. It is rather interesting to note that today in exactly one-half of our States, alcoholic beverages, entirely aside from federal regulations, are entirely tabooed.

In these States not one law-abiding citizen may sell, give away, prescribe or have in his possession any beverage with alcoholic content. Undoubtedly the House of Delegates of the American Medical Association will give this question thoughtful consideration at its coming meeting, and probably will give out some very definite and easily understood statements concerning it.

Typhoid in Large Cities of the United States in 1920.

There are now sixty-eight cities with a population of more than 100,000. More than one-fourth of the population of the United States lives in these cities, and nearly one-sixth lives in the cities of more than 500,000 population. Every one of the twelve largest cities (more than 500,000 population) had a typhoid death rate under ten in 1920. Ten of the twelve cities had a rate under five. Seven of the nine cities with a population of from 300,000 to 500,000 show improvement over the 1919 rate. The twelve cities with a population of from 200,000 to 300,000 also show a lower death rate. In reviewing the whole record for 1920, it appears that typhoid is still decreasing in the large cities of this country at a rapid rate. Last year the striking drop in typhoid occurring between 1918 and 1919 was ascribed in large part to the typhoid immunization practiced in the army camps in 1917-1918. Additional facts are now at hand to bear out this belief. In a number of localities it has been found that whereas before 1919 the male typhoid rate in the age-group 20-30 was somewhat higher than the female, this relation was reversed in 1919 and the female typhoid rate was much higher than—in some cases more than double—that of the male rate for the corresponding years. It is especially interesting to note that the vaccination immunity persisted to a considerable degree in 1920 and, so far as specific data are at hand, showed no signs of wearing off. The general typhoid death rate seems to cor-

roborate this inference, since the 1920 rate fell below that of 1919 in about the same ratio as that of 1918 fell below that of 1917. At all events, the 1920 rate gives no indication that the men inoculated against typhoid in 1917 and 1918 had in any large proportion lost their immunity in 1920. A comparison of the honor roll (typhoid death-rate from 0.0 to 2.0) for 1920 with that for 1919 shows that the number of cities with the lowest rate has increased from eight to ten. Three cities, Chicago, Scranton, Pa., and Tacoma, Wash., are on the honor roll in both years. Cambridge, Mass., has the distinction of making the best record of any American city for the whole fifteen-year period.

The States and Mental Defectives.

More and more the different States are beginning to realize the perils that result from neglecting the complications that mental diseases introduce into the problems of delinquency, crime, dependency, and other social ills, and are taking steps looking to the cure and to the prevention of these diseases. Particularly, they are stressing preventive work among children, both because these are the most easily accessible and most easily studied and even more because, as is now thoroughly understood, they are likely to suffer from many small and easily remediable health defects which, if neglected, may very probably heavily handicap them through life.

Delaware is the latest State to take action. As a result of a two-year survey in Sussex County, following a similar survey in New Castle County, both made by the U. S. Public Health Service in collaboration with the Children's Bureau, the State officials engaged in the care of mental defectives have become intensely interested in the establishment of a bureau of mental hygiene in connection with the State Board of Charities to deal with the subject.

At the request of the secretary of the board, the representative of the Public Health Service who had directed the original surveys was sent to Delaware to outline a program for the institutional care and community supervision of the mental defectives resident in the State.

First steps in carrying out this program have been taken by the appropriation by the legislature of $60,000 for improving the care and treatment of the mental patients in the State Hospital at Farhnhurst. A training school for nurses specializing in neuropsyiatric diseases will be opened; reconstruction aids in both occupational and physico therapy will be engaged; and additional physicians will be employed.

The State Fails.

A child suddenly falls ill. The malady is strange; physicians who are called give the disease a name, and tell the parents that any relief which science affords is only palliative and not curative, and that body forces frequently overcome the disease. The condition is actually encephalitis, an inflammation of the brain. As with other diseases affecting the nervous system, there ensue excitation, delirium, fever and twitching of the arms and legs. The parents are anxious and wish to do everything that is humanly possible. It is not surprising, therefore, that they accept the services of a pretender to scientific knowledge. They know no anatomy or physiology; they cannot judge between the true and the false; they know only that their child is sick and that a man who is permitted by the state to practice the healing art is offering them aid. They accept. How many parents would not? The chiropractor administers his treatment. Gradual remission of the symptoms ultimately occurs. The parents are overjoyed. In the first flush of their happiness, they write glowing testimonials to the chiropractor's ability. A miracle has been worked! The sensational press is furnished with "live" material. Sunday "feature pages" carry columns of write-ups and pictures and incidentally —or is it incidental—whole pages of advertisements of practitioners of the pretending science. "One hand washes the other." Then it is discovered that the miraculous cure was not a cure, that the treatments have in fact been so painful that the child's condition is possibly worse; that the chiropractor has been relieved of attendance, and that the child resents his muscular ministrations. Does the press give the pub-

lic these facts? Do the advertisements cease? Not at all. What of the parents and the child? To whom shall they look? Whose duty was it to protect them against ignorance and incompetence? "The first duty of the state," says Disraeli, "is the care of the public health." When the state permits those with no scientific knowledge, who know nothing of physiology, of anatomy, of pathology, of infection or immunity to treat disease—no matter what the method employed—the state fails in its duty.—Jour. A. M. A., March 5, 1921.

Gynecology and Obstetrics

Robt. E. Seibels, M. D., Department Editor

A Method of Inducing Premature Labor—This method has much to recommend it—simplicity and safety in the main. The vulva is shaved, the parts scubbed with soap and water and the vagina prepared as usual. With a good light and exposure, the cervix is caught in a tenaculum and brought down—a good bite should be taken so the tenaculum will not cut through. A probe is passed to open the cervical canal. The end of the packing is dipped in green soap so that it will slip easily and the cervical canal is tightly packed. Then the vagina is packed. A sterile dressing is held in place with a T binder and the patient kept in bed. Quinine sulphate grains 5 is given four times a day.

After 24 hours the packing is removed and more inserted, the quinine being continued. Sometimes labor begins after the first packing; occasionally only after the third packing are the pains set up. As a rule they begin fairly promptly and after the packing is removed, the entire products of conception are extended in one mass. The membranes should not be ruptured until dilatation is complete or nearly so: frequently in the earlier months, with a non-viable fetus, we do not rupture the membranes at all but allow the mass to be delivered as a whole.

This method is especially useful in the induction of abortion in cardiacs and tuberculous patients where it is desirable to obviate ether and time is not a factor.

Icterus Neonatorum—Jaundice in the newborn is a common incident—some authors reporting its occurrence in as high as 33 per cent of their deliveries. It varies all the way from a slight yellowish tinge to the skin to a deep yellow, even affecting the the mucous membranes: the less severe forms are more common. In the absence of biliary obstruction and of syphilis, this complication usually yields promptly to catharsis. One stand-by is calomel grains one-tenth given every six hours for six doses and followed by an enema. The disease often distresses the mother and should be treated early to put her mind at rest.

MENTAL AND NERVOUS.

Jas. K. Hall, M. D., Dept. Editor.

Thus far it appears the human mind has been able to conceive of two situations only in which there is complete and unalloyed pleasure—or at least freedom from every kind of discomfort. Both of these places, strange to think, are outside of conscious daily life. One condition unattended by any degree of discomfort is that of the child in the mother's womb; the other condition is that of the individual in the orthodox heaven. In neither situation is there pain or discomfort, but happiness alone, or at least fulfillment of every recognized desire.

The child in the womb is in a state of potential omnipotence—all its needs are met—all its desires—if they exist—are fulfilled. Disappointment it probably cannot know. Heaven is synonomous with absolute contentment, with complete fulfilment of every desire, with happiness unlimited It represents in pleasure and in perfection the ultimate. Nothing can be beyond.

Between these two states—the life before life and the life after life—in this present every-day existence—ah, there's the rub!—how many disappointments, how much pain, how much ignorance and sorrow and distress and awkwardness and tragedy and law and force and cowardice and evasion and failure!—all because of inability of the individual to adjust himself to the new and the dangerous environment into which he was impelled willy-nilly by his mother's

womb. And when he emerges into consciousness pain is encountered, and disappointment, and longings to escape begin to assert themselves.

No permanent solution of difficulties, however, can be made for this life. Situations can be met only as they arise—over and over again. Hunger and thirst recur, fatigue comes again after exertion; clothes wear out; friends and loved ones die or disappear from the immediate environment, and new attachments must be made. Activity implies discontent; gratification and fulfilment of desire can be temporarily only in effect; existence is filled, therefore, with instability; our daily life is up and down. The purpose of human effort is, of course, to stabilize conditions for as long a period as possible—to stop the hand-to-mouth existence. But the scheme has failed and it will fail. What has been will be, and what is to be has already been.

The emotions—whatever they may be—the feelings—must constitute the basis of personality—of character—the determining factor of the individual reaction to the environment. One's emotions determine therefore the kind of life one lives. Now the emotions are coming to be looked upon as of physical in origin. Hunger—perhaps the most primitive in point of time of all the emotions—is undoubtedly the earliest manifestation of a human need. Unrelieved, hunger begets pain. The ingestion of food supplies a need, and, at the same time, gives rise to a pleasurable sensation. So it may be in any other domain. Pain or unhappiness is the manifestation primarily of an unrelieved need at first, perhaps, always material, later, at times, moral or spiritual. Love is centered upon the object which gives pleasure—at first the mother. Hate is engendered by obstruction of gratification of desire, and is directed against the object causing the interference. Emotional reaction assumes individual character in childhood, and impressions made at that time are probably permanent, and for that reason of profound significance.

Disturbed, or disordered, emotional reaction is painful, and escape from it is sought in various ways. The catatonic patient may assume the intrauterine posture, and lie folded up for weeks, withdrawn from the cares and troubles of reality, oblivious of immediate environment—as nearly as possible a representation of life before birth. The maniac may escape the pain of repression by giving free expression to every impulse. The alcoholic or other drug addict attempts temporary escape from stern reality by inducing some degree of narcosis—another method of reverting to intra-uterine existence. And when all other means fail, self-destruction opens the road to permanent escape from ills intolerable. If happiness cannot be found, escape must be had from unhappiness and discomfort. Whatever be the life, that alone must be the object. But in the multiplicity of efforts adopted by many individuals in search of the Great Desideratum failures are many and disappointments numberless, and these we designate the neuroses, the psycho-neuroses, and the insanities. In the Psycho-Anlytic Review for April, 1921, Dr. David Forsyth, of London, discourses learnedly and interestingly about all these things in an article entitled "The Rudiments of Character."

State Medicine

L. B. McBrayer, M. D., Department Editor

Fact and Opinion as to the British National Health Insurance Act.

(By Ordway Tead, Bureau of Industrial Research, New York City)

Having spent last summer in England with the chairman of the health insurance commission of Pennsylvania, investigating the operation of the British health insurance act, I find myself drawn into a controversy not only as to the facts of the present operation of this legislation, but also as to the value of health insurance for us in this country. And I find much to my regret that the facts about Great Britain's experience are supposed by many to offer some final answer to natural questions about the kind of experiment we should here undertake. I recognize that this sedulous concern about the experience of England has its values. I recognize that we have much to learn from Europe about health insurance. But I also believe it would be a great misfortune if we allowed controversies as to the

facts of the English experience to delay our consideration on a clean slate of America's public health needs.

I say this because of a fear that such controversy may be continued for an indefinite period, divert attention from local issues and in general obscure and complicate a problem which in its broad outlines is a reasonably simple one.

Already there has been considerable assertion and counter-assertion as to the facts about the operation of the British act. Other American investigators were in England before we were and others have returned since. The observations which have resulted are on some important points at diametrically opposite poles. In other cases the same facts are acknowledged but they are seen in such different light and stated with such different emphasis that opinions are wide apart.

I made no pretense to having brought home "the truth" about the British act, or even a tiny fraction of the truth. But I know that I went with no preconceptions, with no case to prove, with an honest desire to establish as sound an opinion as one could in a six weeks' investigation. And I know that the conclusions which we presented to the Pennsylvania commission are not in agreement with those of certain other recent investigations made abroad. Why is this? How is it that honest minds can be so far apart?

I

In attempting to answer this question I have re-read the several preliminary statements, pamphlets and addresses of Dr. Frederick L. Hoffman, foremost spokesman for commercial insurance interests, who spent several months in England last year. I was surprised to find the extent to which my own experience substantiated the facts stated by him. For example in seeing and stating the deficiences regarding the medical benefits, he puts the case only a trifle more strongly than I have. In indicating the anomalous condition which gives to the insured no guarantee of specialist diagnosis and hospital care, he calls attention to a discrepancy which is just as real and as serious as he indicates. In short, his facts show exactly what our facts show; namely, that the act does not provide all the benefits it ought to for all the people who need them; and that even when the right provision is made in the statute the actual performance is not as efficient or socially beneficial as it ought to be. But these are facts which not only American observers are agreed upon, but every intelligent Englishman as well. The opinion there is practically unanimous that the benefits offered under the act are far too few, and that its present administration is far from perfect.

The real question is: What construction are we going to put upon these facts? Do they argue that the English want the act repealed, that health insurance is a failure? That too is a question of fact and the answer which we got from the great majority of those interviewed was that even if it were possible, repeal would not be contemplated. And it would not be contemplated, not because the English are good natured and inert, but because they see in health insurance permanent values to be preserved.

The thing to do, said almost everyone, is to improve the act and extend the benefits in a radical way to include more people and more types of medical service.

If this is so, much of our American comment about the success of the act is beside the point, since it misses the point of the criticism which the English so freely make of themselves and so freely supply to the outside investigator. In all their criticism they assume the fundamental worth, the continuance and the improvement of the act. And only as the investigator realizes their assumptions, will his construction of the facts keep him on the right track.

The answer then to this question as to how different people can see the same things, agree to a large extent upon the facts, and still reach such opposed conclusions is that in the one case they reckon with the assumptions in the mind of those supplying the facts, and in the other case they do not.

I do not mean to convey the impression, however, that there is no opposition to the act. And I recognize that there is a vast amount of completely passive, uninterested acceptance of it, as there is naturally to all social legislation. But the only opposition which makes itself heard in England is not that of the employers, nor of the taxpayers, nor of the workmen-contributors, nor yet of the generality of the

doctors. It is the opposition of that minority of doctors and those trade unionists who believe that the insurance idea should be supplanted by a thorough and consistent application of the public medicine service idea. In short it is an opposition on diametrically opposite grounds to the principal opposition put forward in this country.

II

There is another point at which the disagreement of the investigators might well annoy anyone trying to evaluate the English experience. One may well ask: are there not statistics to prove that the act has been a blessing or a burden? My answer is that there are not. At least we could not discover them. And the testimony of officials was universal that any figures they might give would be valueless as proving anything final about the act.

I know that figures have been brought back about the mortality of women, about increasing expenditures under the poor law, about the increasing tuberculosis rate. But as to all those figures the comment of any scientific person must be that there have been so many other factors besides the health insurance at work in the last nine years to make them what they are that they prove nothing about the working of the act. And when we try to consider the adult male population, we find at once that the five war years throw every reckoning out. Our conclusion, therefore, was that any deduction which we might want to draw about the working of the act could not be drawn from figures; and that conclusion was reinforced by the agreement of those with whom we talked.

There is, perhaps, one exception to this. Figures as to the total cost of the act are available—at least in a very general and approximate form. And it was our tentative conclusion, based on all the estimates we could get, that the act operates at too great a cost for the benefits received from it. This, again, is a conclusion with which most British observers agree. And the primary reason for this high cost they are also all too painfully aware of. That reason is the method of administering the insurance through overlapping and duplicating private approved societies. The approved society—at least in the form now in use in England—is a tremendous mistake and failure. It was a concession to vested interests which before it is finally thrown out of the act will cost the people thousands of pounds for which no value will have been received.

III

I have intentionally dwelt at some length upon the relative place of fact, opinion and point of view in evaluating the British act because it is senseless that controvery should go on indefinitely among American investigators as to conditions in England.

May I next indicate what in our observation the most important of those conditions are?

The British act is accepted by the great majority of all the affected groups as a good thing, as a workable instrument, as a valuable starting point toward better times in public health.

More than that, the act is working with remarkable smoothness and satisfaction when its inherent defects are considered and the disorganizing influence of the war appreciated. One is almost tempted to say that it works better than it deserves to, when the compromises which surrounded its creation are borne in mind. For it is important to realize that Lloyd George started to have the insurance carried in a state fund, to offer a funeral benefit as well as one in times of sickness, to secure medical service for the dependents of employed persons; and it was planned early after the passage of the act to incorporate nursing services, expert diagnostic facilities and the services of specialist consultants. None of all this has ever been done, however. And not the least important of the reasons why the benefits were so curtailed was the amount of expense which was found to be involved. Indeed, so crucial is the budget factor in all English consideration of public health measures that the saying has become a byword that "England can have a healthy nation just as soon as she is willing to pay for it."

The cash benefits are small. In general they are much less than 50 per cent of wages at the present time. This means that the temptation to malingering is reduced to almost nothing since a good workman can in two days of work earn more than the week's benefit. It means also that the worker is likely to return to work before all recovery because he cannot afford to remain idle any longer.

The medical benefit is the feature which comes in for most frequent criticism. It is said that the quality of medical service received by the insured is inferior; that the doctor discriminates in favor of his private patients; that lightning diagnosis and the perfunctory prescribing of a bottle of drugs or pills prevails. There is undoubtedly much truth in this criticism. But it is well to remember that it is not criticism levied against health insurance as such.

Remember, for example, that every registered practitioner is eligible for a position as insurance doctor. Remember that the law only requires to be given those services which "can consistently with the best interests of the patient be properly undertaken by a practitioner of ordinary professional competence and skill." Remember also that the insurance doctor has only available such consutling, surgical and hospital facilities as are locally provided by philanthropy or the local authorities. Also, the panels were not limited in size until the 1920 amendments to the act. And finally during the war the scarcity of doctors was acute.

Considering these factors, it is fair to say that the medical service is all that could have been expected.

The doctors themselves, while seeing clearly enough the faults in the act, are on the whole working it willingly; and we were assured on every hand that they would be the last group to want to see it repealed. Out of 24,000 doctors, probably 4,000 of whom are either consultants or retired, over 14,000 are insurance doctors. And that number includes general practitioners of all grades of professional standing. It would be most inaccurate to conclude that the good doctors are not doing the insurance work. Where a doctor's practice is wholly in a non-industrial neighborhood, there is, of course, no object in such a doctor's becoming an insurance doctor; and it is thus true that to some extent the doctors with upper class practices are not under the act. But that is quite different from saying that the good doctors do not participate.

Much has been made in our country of the problem of the doctor's relation to the administrators of the insurance. That problem is of course a real one; yet it is being worked out on the whole without undue friction. Only those doctors that desire to become insurance doctors do so. They only take those patients whom they agree to take; and the patient takes a doctor of his own choice. The contract which the doctor enters into with the local insurance committee demands nothing in the way of terms or conditions which any reputable physician does not expect to give in service to those who call upon him in any case. This bugaboo of "red tape" and of the doctors "being the slaves of a bureaucracy" is largely rhetoric. In practice there is a large measure of self-determination by the doctors, for they are well represented on the local insurance committees and the national advisory committees, and they compose the local appeal body that sits in the case of any doctor who has charges preferred against him.

As a result of the co-operative relations within the profession which the working of the act entails, and because of the opportunities which the patient has to indicate when he is getting unsatisfactory service, the general level of medical treatment is probably higher than it ever was. And it certainly is further true that thousands more people see a doctor and see him weeks if not months earlier in the progress of the disease than was ever the case before there was any health insurance. It is in this sense that the preventive work is getting its best chance under the act.

Otherwise from this the direct relation between the operation of the act and the provision of fundamental preventive measures it hard to establish with definiteness, although I believe the connection has been close. Since 1912 when health insurance started, important progress has been made under other legislation in establishing tuberculosis clinics, venereal clinics, maternity and child welfare clinics, and the program of public medicine for school children has been broadened and improved. Finally, in 1918, as a co-ordinating and constructive agency in health matters, the Ministry of Health was established. Indeed, there are in all on full or part time and including the insurance doctors about 18,000 doctors in the employ of one or another of the public authorities.

This fact calls attention to the last point which should be treated in this effort to pick out the high spots rather than present a systematic account. The tendency at work today is toward dis-

associating the medical services from the limitations of the insurance idea. Indeed, I believe perhaps the most significant fact of the present situation is the more or less articulate and increasing demand for universally available medical and hospital attention on a public health basis. It is recognized that there are other and perhaps better ways of getting this than through a national medical service. But the fundamental notion that the public health must be provided for and conserved not on some certified division of insured and non-insured, but on the basis of the need for treatment, is gaining momentum. What its practical results will be it is not easy to say. But it may mean bringing the dependents under the benefits of the act. It may, and probably should, mean making the hospitals public institutions, and providing at the hospitals staffs of specialists for consulting and surgical work. It may mean providing nursing and dental treatment on a public basis.

One thing is clear, however. England would never have reached her present mood about the desirability of using public funds extensively for the provision of services of the above type without the experience of health insurance. The doctors would not have seen the problem; the people would not have demanded the improved medical service which they now expect; the government would not have been interested to create and elaborate a Ministry of Health whose purpose is primarily preventive.

Just as there need be little difference among investigators as to the facts in England, there need be none as to the importance of doing preventive public health work in the United States. It is irrelevant to use the slogan of Prevention as a counter to the demand for Insurance. Insurance is primarily to compensate the wage-earner through a device for distributing the risk of sickness, for income which he would otherwise lose when sick and most in need of it. Preventive public health measures are calculated to reduce the possibilities of illness and to treat disease in the incipient stages. The one is no less important than the other. Both are being worked on in England; both will have to be worked on here.

I began by hoping that differences of opinion about health insurance in England would not be given too serious weight in settling the issue here at home. I conclude with the same hope. For differ as we may about details, it is a fact the British health insurance is here to stay although it promises to be radically improved by the end of another ten years. And it is equally a fact that England has embarked on a preventive public health program in respect to such matters as maternity, child welfare and venereal disease, which, whatever its defects, is a more comprehensive national plan than we yet have. Why not stop arguing about England, and about prevention versus insurance, and get on to America's own job which presumably includes them both?

X-Ray and Laboratory

Robert H. Lafferty, M. D., Dept. Editor.

The initials to the following article that appeared recently in three of the Philadelphia papers are readily recognized as those of Dr. Geo. E. Pfahler, probably the leading roentgentherapeutist in America. Anything from his pen demands serious consideration:

To the Editors of the Ledger, North American, Bulletin.

There has been much notoriety given to a supposed new discovery with regard to the use of the X-Rays in the treatment of cancer, or to the discovery of a new form of X-Rays which are supposed to be more powerful in this direction.

This, like so many similar announcements, depends much more upon the flight of someone's imagination than upon facts, and since such propaganda does much harm to the real progress of science, I write to give you the facts, but I prefer to have my name omitted. I want no personal notoriety in the matter.

The X-Rays have been used in the treatment of cancer for a period of over 20 years with more or less success, depending upon the extent of the disease and the skill with which the rays have been used. At first only the most superficial skin cancers were cured. Gradually with improvements in skill and apparatus, and with increased knowledge of the nature of the disease, even deeper cancers have been brought un-

der control by the use of the X-Rays and especially when combined with radium properly. Even when used most skillfully and with the best equipment and combination with radium all cancers will not be cured and there is no proof that these radiations will cure more than can be cured by surgery. Probably most can be accomplished by combining radiation with surgery.

No really new discovery has been made such as is indicated by the newspaper reports. On the Saturday night before this newspaper article appeared (Monday) I attended a meeting of the leading men who are interested in cancer research and the development of the X-Rays, and heard Prof. Duane speak. He made no claim to a new discovery, and I believe will claim none now, or he would have given it then.

Tests made in one of the leading research laboratories in America by men who have visited the German laboratories and who have even worked in them, show that in America we have been using approximately the same quality of rays which were used as routine in Germany, and that even the exceptional were only from 10 to 20 per cent more penetrating. This same research laboratory has developed more penetrating rays than any used by the Germans or Prof. Duane and were referred to at the above meeting, but no claim is made of any new discovery. It simply consists of further development of well known principles. Likewise it has not yet been proven that these more penetrating rays are more useful in the treatment of cancer. By analogy it is assumed that they will be more useful because the gamma rays of radium have a greater effect.

The careful scientific physician takes up these advances which are made in the hope of accomplishing more for the cancerous patient, and I believe that much progress will be made, but such wild flights of the imagination in newspaper print can only arouse false hopes on the part of patients and their friends. This leads them away from known valuable methods of treatment, and makes them a prey to advertising quacks.

G. E. P.

Hospitals and Sanatoriums

John Q. Myers, M. D., Department Editor

The 12th day of May just past marks the 101st anniversary of the birth of the world's greatest nurse, Florence Nightengale, and I think that the hospitals of North Carolina did their part well in celebrating this day as National Hospital Day. President Harding and Governors of States made suitable proclamation and the leading hospitals of the States celebrated with the graduating exercises of their nurses. Many hospitals bought badges and gave to nurses and friends to wear in memory of the day which marks the 101st anniversary of Florence Nightengale.

CLINICAL AND PROFESSIONAL NOTES

J. Allison Hodges, M.D.

THE NURSING SITUATION IN VIRGINIA.

The present lack of an adequate number of nurses in Virginia brings us face to face with an almost tragic reality, and, from accounts received, the conditions which prevail in this state are the same that obtain generally all over our country. The problem is a serious and vital one, and interests alike the public and the professions.

The nurse has now become even more of a necessity than ever before, due to the changed economic and sociological conditions resulting from the recent world war, and since this decrease in numbers has occurred despite the great increase in population during the same period, and as it seems likely that State Medicine, in one form or another, is coming, and that to meet this emergency of lack of both physicians and nurses, the U. S. Public Health Service and the city departments of health throughout the country will be widely expanded, and in doing this, will still further utilize and commandeer all present medical and nursing facilities available, it is urgently necessary that all possible means be taken to protect and guard the public welfare at the present time by the professions most interested.

The tension existing in professional circles because of this shortage, especially of private-duty graduate nurses and hospital-pupil nurses, is now almost as acute as during the war, and is not improving, as had been thought probable.

This shortage of nurses is in part comparable to a like shortage of doctors in the entire country, but not directly due to the decrease in the number of training schools for nurses, as has been the case in medical schools. Unquestionably, the decrease in the number of medical schools within the past fifteen years from 160 to 82 in number, and the consequent decrease of medical students from 28,000 to approximately 12,000, is in part the cause of the shortage of physicians.

In the case of the nursing profession, this is not true, for there has been, on the other hand, a large increase in the number of hospitals throughout the country, especially private and community hospitals, and apparently there should have been also an increase in the number of nurses graduated annually. This increase in the number of hospitals, however, has been within a comparatively recent period, and sufficient time has not yet elapsed to insure an increase in graduate nurses, but on the other hand, many of the new hospitals and also old ones which have made additions, have called upon the graduate nurses to fill the positions ordinarily occupied by pupil nurses, of which there has not been a sufficient number to supply the vacancies. Taken as a whole, consequently, the nursing situation has not improved, but in this State is becoming more acute and is causing physicians and nurses and those interested in public welfare, consequent anxiety and uneasiness.

This growing demand for nurses is, however, a distinct compliment to their recognized ability and efficiency, and has necessitated thoughtful inquiry as to the cause of the present shortage of nurses, and the best possible remedy to meet it. When it is remembered that training schools for nurses have been established but forty-eight years in the United States, the success of their work is as remarkable, as it is commendable, and it is evident that the present shortage is due to a variety of causes, produced by conditions, both within and without the limitations of the professions of medicine and nursing.

The main causes for shortage of nurses are:

1. The specialization and selections of the graduate nurse, as follows:

a. By limiting nurses to certain selected diseases, such as obstetrical cases, surgical cases, etc.;

b. By limiting work to certain specialities, such as anaesthetics, dietetics, office nurses, dentists' and physicians' assistants, etc.;

c. By limiting work to institutions, such as hospitals, in official positions, boarding schools, as institutional nurses, factories, as industrial nurses, dispensaries, as maternity nurses, and all forms of social service work, etc.;

d. By limiting work to public health service of various kinds, the Army and Navy and other branches of service;

e. By limitation of service because of marriage and cessation of active work, after an average period of eight years of public service.

2. The limitation of the nursing sphere, as follows:

a. By limiting work only to hospital-private cases;

b. By selection of only day or night work;

c. By doing only city or country work;

d. By working only in certain homes, providing certain comforts;

e. By working only limited hours, on private duty, and

f. By remaining in the city in which the nurse graduates.

3. The length of time required to secure a diploma, exactly the same number of calendar months being now required for graduation of both doctors and nurses;

4. The constant development and extension of the courses;

5. The contrast with other professions and avocations which provide as much remuneration, with less time for preparation;

6. The war-demands, which gave the opportunity to many absolutely untrained nurses, to take up the work and continue it;

7. A decline in the humanitarian spirit;

8. Financial returns quicker from other avocations which require less arduous service for preparation;

9. Restlessness of some graduate

nurses and temporary removal of others from the State;

10. Lack of hospital comforts and recreational diversions for pupil-nurses while in training;

11. Lack of individual interest and of continuous and coordinate courses of study by the most competent instructors on the hospital staffs;

12. Possible inadequate or unjust basis of remuneration of pupil-nurses for services rendered as private-duty hospital nurses;

13. Existing sociological and economic conditions, dependent in cities upon overcrowding of population and life in apartment houses; and in the country, upon insufficiency in number of domestic assistants, and,

14. The constantly decreasing number of entrants, as well as of graduates, in both the allied professions of medicine and nursing, which has had the natural tendency to foster the spirit of individualism, and to cause undue specialization, and the resultant feeling of a professional power which has furnished some excuse for its abuse, regrettable as this is, for "while it is well to have a giant's strength, 'tis tyrannous to use it."

The above-named causes, and probably others, have produced the following results:

1. The scarcity of private-duty graduate nurses for the use of the general public;

2. An increase of undergraduates and correspondence school graduates;

3. An increased expense to patients in hospitals, because the hospitals have not had sufficient nurses to perform the usual floor duties;

4. The necessity of extra nurses on some cases, because of these conditions;

5. Probable depreciation of standards, because of the exigencies of the present times;

6. A possible commercialization of the profession by some, and

7. The danger of radicalism from those who have felt the results of these conditions, and may wish to institute legislative action which might endanger the present legal status of the nursing profession, as well as that of medicine.

N. B.—The remedy for meeting and obviating the present conditions, without lowering the standard of nursing, is a perplexing problem, and in order to ascertain the sentiment and opinion of the medical profession, a questionnaire was sent to sixty physicians who were presidents of their local medical societies, with the view of securing an expression of their personal views as representative men in the profession, and at the same time, the presidents of the different nursing organizations in the State were consulted, all of these being requested to give simply their personal opinions, and in the next issue, a summary of all of these will be given, and in the meantime, if any other physicians and nurses feel an interest in this subject, their assistance will be greatly appreciated, as a solution, both efficient and just to all concerned, is desired.

(To be continued in July issue.)

Nurses Corner

Edith M. Redwine, R. N., Dept. Editor

The question, "What are the county public health nurses doing in North Carolina?" can best be answered by the following tabulation of their work up to December 1, 1920—total of 136 months:

5,321 nursing visits—giving demonstrations and bedside care in homes.

6,048 infant welfare visits and individual instruction in baby care.

1,261 prenatal visits and individual prenatal instruction.

1,088 prenatal cases registered with State Board of Health.

1,027 babies and 395 preschool age children registered with State Board of Health.

1,652 babies and young children weighed and measured—and mothers advised regarding diet.

282 demonstrations of baby care and feeding—and group instruction in prenatal and infant care.

11 exhibits planned and "baby booths" at County Fairs.

374 individual and group instruction of midwives—73 found who were not registered; 81 ignorant of law regarding use of silver nitrate; 238 furnished with silver nitrate.

90 "Little Mothers' League" classes conducted, with attendance of 387—fifty of whom have received certificates.

1,734 tuberculosis visits

17 "rural diagnostic clinics" (worked up by county nurses) with 875 tuberculosis examinations—by specialist from

State Sanatorium. (Among these were some mothers with nursing babies).

5,128 instructive, co-operative, social service and survey visits. Do not know what number related to mothers and infants—same true of 150 patients accompanied to physicians, dentists, clinics and hospitals.

510 home visits to school children.

145 schools visited.

513 visits to schools and 415 hours' time spent at schools.

15,085 pupils examined—weighed and measured—or inspected: and assisted health officer to examine 200 additional. 26 excluded for contagions. 504 treatments given at schools.

550 talks at schools: 4 instructing groups of teachers to make; physical inspections of pupils; 335 to pupils in class; 96 classes conducted (some at teachers' summer schools); 115 on Modern Health Crusade.

"Modern Health Crusade" introduced into 27 schools—with 2,250 children enrolled.

696 general lectures and health talks given: Tuberculosis slides with lectures given at 25 points (total attendance of 2,860).

354 "Hygiene and Home Nursing" classes conducted, with attendance of 3,216. (Classes emphasizing "Infant Care" and Tuberculosis).

Instrumental in getting 96 patients to use sputum cups; 24 homes screened; 826 sanitary privies installed.

1,728 office and other treatments given, including 800 anti-typhoid, 477 smallpox vaccinations, 180 Schick test, 16 hookworm specimens obtained, 27 urinalyses made.

Aggregate of 67 days duty with State tuberculosis clinics, and 22 days assisting with State tonsil and adenoid clinics and State dental clinics.

Total of 52 weeks to influenza emergency work.

This furnished by the Director of Bureau Public Health, Nursing and Infant Hygiene, North Carolina State Board of Health, which bureau is established jointly by the State Board of Health and American Red Cross, and the work of the county public health nurses comes under the supervision of the bureau. The assignments of the nurses for county work are also made by the bureau and monthly reports of their work filed with same.

ROSE M. EHRENFELD,

District No. 1.

The regular monthly meeting of District No. 1, N. C. N. A., was held in the lecture room of the Biltmore Hospital Nurses' Home, Thursday, March 3, Miss Mary Laxton, president of the District Association, presiding.

After the usual business a very interesting account was read of the work done in the moonlight schools under the direction of Mrs. John Morriss. A motion to give Mrs. Morriss financial aid in this work was made and carried.

A paper on the course of instruction in public health nursing, given at Simmons College, was read by Miss Pearl Weaver. Miss May Stockton gave an account of the work being done in that line in the schools for public health nursing, in Richmond, Va., and Miss Cullen, representing Teachers College, Columbia University, also talked on the opportunities given by that institution.

A social hour followed and tea was served in the reception rooms by the members of the Biltmore Hospital Alumnae Association.

District No. 8.

At a called meeting of District No. 8 at Wilson, March 19, it was unanimously voted that three additional counties, Wayne, Pitt and Greene, be admitted to this District.

Five counties, Wilson, Northampton, Halifax, Edgecombe and Nash formerly comprised the District.

The additional members gained by this action will doubtless mean much to the organization.

A general meeting of the body was held in Wilson April 1.

Miss Martha C. Newman of Wilson is president of this District.

Roster of North Carolina District Officers.

Asheville—District No. 1.

President, Miss Mary P. Laxton, Biltmore.

First Vice-President, Mrs. A. C. Chalmers, Asheville.

Second Vice-President, Miss I. A. Hanna.

Secretary, Miss Athalia Lord, Asheville.

Treasurer, Miss Ella Case.

Winston-Salem—District No. 2.

President, Miss Blaudens Biggers, City Memorial Hospital.

First Vice-President, Miss Hattie Pepper, Summitt St.

Secretary, Miss Annette Ramseur, 11 Bank St.

Treasurer, Miss Lillian Kecthie, 313 W. Second St.

Charlotte District No. 3.

President, Mrs. Walter P. Auld, 521 Siegle Ave.

First Vice-President, Miss Margaret Sharrock, 28 W. Vance St.

Second Vice-President, Miss Mattie Moore.

Secretary, Miss Bessie Stanford, College Apts.

Treasurer, Mrs. Duncan Tillett.

Greensboro—District No. 4.

President, Miss Gilbert Muse, High Point.

First Vice-President, Miss Flora Mathews, 208 Isabella St., Greensboro.

Secretary, Miss Cora Beam, N. C. College.

Treasurer, Miss Laura Clark, 201 S. Spring St.

Durham—District No. 5.

President, Miss Josephine Mainor, Durham.

First Vice-President, Mrs. Mamie Nunnally, Durham.

Secretary, Miss Mary Oliver, Durham.

Treasurer, Miss Alice King, Durham.

Raleigh—District No. 6.

No report.

Fayetteville—District No. 7.

President, Miss A. E. Kelly, Fayetteville.

First Vice-President, Miss Pearl Smith, Sanford.

Second Vice-President, Miss Beta Elkins, Lumberton.

Secretary, Miss Alice Watkins, Fayetteville.

Treasurer—Miss Rosa Johnson.

Wilson—District No. 8.

President ,Miss Martha C. Newman, Wilson.

Secretary, Miss Annie Morris, Wilson.

Treasurer, Miss Caroline Moncure, Roanoke Rapids.

New Bern—District No. 9.

Given above.

Wilmington—District No. 10.

President, Miss Columbia Munds, 207 S. Ann St.

First Vice-President, Miss Addie Perry, J. Walker Hospital.

Second Vice-President, Miss Evelyn Armstrong, 718 Princess St.

Secretary, Miss Marie Farley, 411 Doels St.

Treasurer, Miss M. L. Cullilum, 1721 Chestnut St.

News Items

WAYNE COUNTY

We regret exceedingly that the following report from Wayne County has been overlooked so long. The secretary sent it in just as the February issue was in the press. It was filed with other copy and was overlooked for March.—Ed.

Goldsboro, N. C., Feb. 11, 1921.

The annual meeting was held in Goldsboro. The usual routine business was transacted together with four interesting and unusual cases reported and discussed by members of the society.

The following officers were elected for the ensuing year: Dr. Oscar Eason, President, Goldsboro, N. C.; Dr. G. B. Morris, Vice-President, Mount Olive, N. C.; Dr. C. F. Strosnider, Secretary-Treasurer, Goldsboro, N. C.

Dr. Oscar Eason was elected delegate and Dr. G. B. Morris was elected alternate to the meeting of the State Medical Society at Pinehurst in April, 1921.

Jan. 25, 1921: Meeting was called to order and the routine business transacted.

The following interesting and instructive papers were read as follows:

What the Practitioner May Expect of His Radiographer, by Dr. H. B. Ivey of Goldsboro.

Case of Terata, by Dr. Henderson Irwin of Eureka, N. C.

Both papers were freely discussed by members of the society

Committees: A committee was appointed to assemble information regarding the indigent tubercular cases in Wayne County and the best method of the county caring for said cases with a view of arresting the incipient and mod-

erately advanced cases, and the removal from homes of the far advanced cases, when possible, to prevent infection of others.

The society accepted Dr. Henderson Irwin's proposal to furnish a barbecue for the February meeting of the society.

The President selected the following members to read papers at the February meeting: Dr. Wm. H. Smith, Goldsboro; Dr. Wm. Spicer, Goldsboro.

Wayne County Medical Society is rapidly harmonizing with the spirit of the City of Goldsboro and the County of Wayne in that service and progress is becoming the general watchword.

Fraternally,
C. F. STROSNIDER,
Secretary-Treasurer.

Dr. Leighton W. Hovis has returned to Charlotte, N. C., after 10 months' special study in New York and has become associated with Dr. A. M. Whisnant, doing eye, ear, nose and throat work.

Dr. Hovis began general practice in Charlotte 16 years ago and has always been recognized by his confreres as a most able and conscientious and hard worker. He was one of the first from his county society to enter the service and one of the last to get back. During the entire time he was commanding a field hospital unit.

In New York he attended the Post Graduate, spending 10 months in additional study and perfection along the lines he had chosen.

DR. D. A. STANTON HONORED.

Resolution.

Resolved that we, the Councilmen of the City of High Point, N. C., in regular session assembled, recognizing the splendid leadership and management of the affairs of the city, his constant courtesy to the Councilmen and his faithful devotion to the interests of the people and not forgetting the epoch marking progress of the community along all lines during his connection with the municipal government, do extend a vote of thanks to our Honored Mayor, Dr. D. A. Stanton, who of his own volition retires from the city government, after a long period of distinguished service We present you this cane as a token of personal esteem and beg permission to remind you that we and the entire city shall never forget that during your period of service to the city, High Point has made more material progress by far than during any other period in all its history. It is nothing less than our plain duty to remind you of the historic fact that all of our legitimate industries have had the greatest prosperity and expansion. More factories have been established than ever before, more money has been voted for schools by the community than in all its previous history. More permanent streets constructed than in all our past history. Our water system has been developed to a point of absolute efficiency, and many more miles of water mains and sewer lines have been put down, and sanitary conditions have been attained beyond any measure ever before attempted and this is bearing fruit, as shown by health records.

There has been a most notable reduction in the number of cases of typhoid, malaria fever, and diarrhoea, the three most common diseases of this section caused by unsanitary conditions. The sickness prevented, and the lives saved are worth more than your city spent for all purposes during your administration. The City Abbatoir, the Exposition building, and the Sheraton hotel are some of the notable things established and developed during your administration that will live on to bless our people and we wish for you many years of happiness in this, the city which we know you love.

(Signed)
E. K. INGRAM,
W. L. STAMEY,
JNO. W. HEDRICK,
F. P. CONRAD,

May 10, 1921.

New Public Health Service Hospitals.

The hospital program of the U. S. Public Health Service is moving rapidly. Nine new hospitals, which will accommodate more than 3,000 patients, are now being put into shape for early occupancy. Three of these, in Iowa, Montana, and Oregon, with a capacity for about 500 patients, should be in operation within two months. Others will not be ready for a longer time. Especially will this be the case with three Army reservations, two of which had been abandoned for 10 to 20 months,

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which were specifically transferred to the service by act of Congress.

The Colfax Hotel, at Colfax, Iowa, a leased building with 130 acres of grounds, is being fitted to receive 200 patients. The Army hospital at Fort William Henry Harrison, near Helena, Mont., will be opened with 100 general patients, but may later be greatly expanded. Additional money will be necessary to fit the buildings at Dawson Springs, near Hopkinsville, Ky., for maximum usefulness; but the necessary funds are expected to be forthcoming and the hospital to be opened with 500 tuberculosis patients within five months. The Hahnemann hospital, at Portland, Ore, should be ready for 164 general patients by July 1, and the Speedway Hospital, at Chicago, for 1,000 general patients by August 1.

Of the three Army posts specifically turned over by Congress, that at Fort Walla Walla is attractively situated near Walla Walla, Wash., on a low plateau near the junction of the fruit and wheat belts. The post has been abandoned for a year and, except for two brick barracks, its buildings are in bad condition and must be rebuilt. It will shelter 284 tuberculosis patients.

Fort McKenzie, one mile northwest of Sheridan, Wyo., is pleasantly situated against a northern shield of mountains. Its brick buildings surround a fine parade ground, once planted with trees, which, however, have suffered severely from lack of irrigation since the post was abandoned. Most of the region is sparsely timbered.

The red brick buildings of Fort Logan H. Roots, near Little Rock, Ark., stand on a bluff overlooking the Arkansas River. During the war some temporary wooden buildings were erected, but most of these have been removed.

Fort McKenzie and Roots are each planned to accommodate more than 600 nervous-mental cases. Each of the three posts is likely to be ready in less than six months.

A naval station, at Gulfport, Miss., has just been taken over from the Navy by the Public Health Service and will be utilized as a hospital or home either by the service or by some other branch of the government.

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GASTRO-ENTEROPTOSIS*

Matt. Otey Burke, M.D.

204 E. Franklin St., Richmond, Va.

Is this a disease or merely a mechanical condition? That it can lead to a diseased condition can hardly be denied. That it aggravates any coexisting disease of the plueral or abdominal cavities is practically certain.

Embryology.

The primitive intestine is originally a straight tube formed by the infolding of the hypoblast and is divided into three parts: (1) "the fore-gut, mid-gut, and hind-gut. From the fore-gut the pharynx, the oesophagus;" (2) "the stomach and two-thirds of the duodenum; from the hind-gut the rectum sigmoid, descending colon and spleenic end of the colon are developed. The rest of the intestine is developed from the mid-gut."

The changes that take place in the fore-gut are as follows: the middle part becomes dilated to form the stomach and undergoes a rotation to the right, so that the posterior border, by which it is attached to the vertebral column by a mesentery, is now directed to the left and the anterior border to the right. At this time it is straight, but it soon undergoes a lateral curve or bend to the right at its upper end. It thus assumes an oblique direction, and the left border, originally the attached border, becomes inferior and forms the great curvature, the mesentery by which it was attached becomes the great omentum. The part of the fore-gut below the stomach forms the duodenum.

(2) "The hind-gut is also a closed tube and from it are developed the rectum sigmoid and lower part of the colon."

(1) "The mid-gut is at first an open cavity, freely communicating with the umbilical vesicle. As the body walls grow, this communication contracts very materially, though it still exists to a certain extent, and its open cavity becomes converted into a straight tube, still open where it communicates with the umbilical vesicle.

This tube grows rapidly in length, and presents a primitive curve or loop downward and forward, and, in consequence of its growth exceeding that of the walls of the body cavity, a portion of the loop protrudes into the stalk of the umbilicle vesicle. At a subsequent period, however, the walls of the abdomen grow more rapidly than the intestine, which again recedes into the body cavity.

At a short distance below the most prominent point of this loop a diverticulum arises, which marks the separation between the large and small intestine. The lower part of this diverticulum forms the vermiform appendix, the proximal part, by its continuous growth constitutes the caecum.

After this the anterior or upper part of the gut, corresponding to the small intestine, rapidly increases in length, and about the eighth week becomes convoluted. The lower or posterior part, corresponding to the large intestine, is at first less in caliber than the upper part, and lies wholly to the left side of the convolutions of the small intestine; but later on the curve of the large intestine begins to form, and the first part, the ascending colon, slowly crosses over to the right side, first lying in the middle line just below the liver. It is not until the sixth month that the caecum descends into the right iliac fossa, and so drags the ascending colon into its normal position in the right flank."

Supports of the Stomach.

The lesser omentum, from the transverse fissure of the liver to the lesser curvature of the stomach; the gastrophrenic ligament, from the diaphragm

*Read before the Spartanburg meeting of the Tri-State Medical Association, Feb. 16-18, 1921.

to the cardic end of the stomach; the gastro-splenic omentum.

Behind the stomach is the caeliac axis, also the solar plexus, branches from both help to support the stomach.

Duodenum.

The ascending portion is freely movable; the descending portion is firmly fixed by the head of the pancreas on the left and the peritoneum in front.

Small Intestine.

The small intestines are held in place by the mesentery which is connected to the middle of the cylinder of the small intestine, and connects the convolutions with the posterior wall of the abdomen. Its root is about six inches long, and extends from the left side of the second lumbar vertebra to the right sacro-iliac symphysis.

Large Intestine.

Ascending mesocolon, descending mesocolon, costo-colic ligament, hepato-colic ligament and transverse mesocolon.

The most firmly fixed parts of the gastro-intestinal tract are the cardiac end of the stomach, the descending portion of the duodenum and the splenic angle of the colon.

Other Supports.

The abdominal muscles in front, the spinal column behind and the diaphragm above, which is connected by the pericardium to the cervical fascia.

Etiology.

1. Attitude. 2. Defects of rotation and development. 3. Weakened musculature. 4. Rapid loss of flesh and general weakness. 5. Frequent pregnancies.

Mechanical Effects of Ptosis.

Ptosis of the stomach produces a stretching and narrowing of the pylorus; the pyloro-duodenal angle becomes more acute, the ascending portion of the duodenum may be so pulled down that it makes an acute angle; pressure on the common duct. A strain on the nerves and caeliac axis. Pressure on the pancreas. Lowering of the great omentum; more or less strain on all the ligaments and mesenteries; strain on the diaphragm and through the diaphragm on the cervical fascia.

Ptosis of the small intestine produces a strain on the mesentery and backache, pressure on the bladder and pelvic organs.

Ptosis of the colon produces a strain on the hepato-colic ligament, right and left mesenteries, costo-colic ligament and pressure on the bladder and pelvic organs.

General Effects of Ptosis.

Many people have congenital ptosis and so long as the general nutrition and strength are maintained no inconvenience is felt, but when the body becomes weakened and emaciated the ptosis becomes exaggerated, the angles become more acute, stasis is produced, toxins are absorbed increasing the weakness, producing further sagging, adding to the already existing irritation.

Ptosis of the stomach does not necessarily mean stasis so long as the pyloric outlet is natural and the musculature is normal. Let such an individual become rundown by disease or a sedentary life and continue to overload the stomach; what happens? Peristalsis is decreased, the extra weight causes further sagging, the duodeno-pyloric angle becomes more acute, possibly enough pressure is produced to impede the vascular supply and to irritate the pneumogastric and sympathetic nerves; either increasing or decreasing the Hcl with fermentation or decomposition of the stomach contents, the formation of gases, foreign acids, etc.

Ptosis of the small intestine may cause backache by pulling on its mesentery when the gut has an extra amount of work thrown on it by the stomach emptying its overload of fermented or decomposed products; or the terminal ileum may be too weak to propel the contents through the ascending colon. Ptosis of the transverse colon nearly always accompanies ptosis of the stomach on account of the weight from above and lack of support by the great omentum. The angles do not sag so much as the middle portion. Sagging of the transverse colon means an uphill journey to the splenic flexure, which means an increased force on the part of the musculature: the increased resistance and decreased force necessarily result in more or less stagnation. Stagnation in the terminal ileum and transverse colon are always accompanied by absorption of toxins.

Symptoms.

1. "Attitude."
2. Gastric and intestinal stasis.

3. Pain in the abdomen and back.
4. Neurasthenia.
5. Sulsus between costal margin and umbilicus.

(3) "The attitude is that of physical weakness. The individual is round shouldered and flat chested, standing with the head drooping and arms hanging in front of the center of gravity of the trunk. The waist line is high, the lower abdomen protuberant, giving in uncorseted women not infrequently the appearance of pregnancy.

The costo-vertebral angle is more acute than normal. The lumbar curve of the spine is usually obliterated, giving rise to the straight back, although occasionally the lumbar curve is exaggerated to the point of lordosis. The muscular development is below par and the patient is usually thin and anemic.

Closer observation shows that the abdominal cavity is narrower above than below, because of the flattened chest and straight spine."

While the attitude does predispose to ptosis, congenital ptosis or acquired ptosis is a very potent factor in producing the ptotic attitude in the growing child.

Diagnosis.

The ptotic attitude, epigastric sulsus, prominent hypogastric and iliac regions, gastric and colonic tympany below the umbilicus, are pretty strong evidence of ptosis.

The X-ray is conclusive and should always be used if possible.

Treatment.

So much can be done for these patients and so much can be said about each method of treatment that I shall simply give an outline, reserving the treatment for a future paper.

The treatment may be considered under three divisions:

1. Medical (hygienic, dietetic and calesthenic.)
2. Mechanical.
3. Surgical.

Medical—Simple laxatives and general tonics in way of drugs, remembering to give as little medicine as possible.

Hygienic—Cold showers on rising unless contraindicated, sunshine and fresh air, freedom from worries as far as possible.

Dietetic—A laxative diet, especially green vegetables, fruits, nuts, honey and bran; four or five meals per day, avoiding heavy meals at any time. Rest after meals, raising and massaging the stomach with the hands one or two hours after meals.

Calesthenics—Martin has given eight exercises especially useful in overcoming constipation and in strengthening the abdominal muscles.

1. Flex thighs on abdomen and knees on thighs.
2. Flex thighs on abdomen with legs extended.
3. Inhale with hands above head.
4. Raise trunk upon heels and hands, inhale and exhale.
5. Abduction and adduction of lower extremities with thighs flexed and legs extended.
6. Raise trunk to sitting position.
7. Inspiration and expiration on hands and knees.
8. Inspiration and expiration in knee chest position.

Mechanical — Adhesive plaster, corsets and abdominal spports or bandages.

All supports should be applied with the patient in the Trendelenburg position.

Corsets should fit tightly at the bottom, moderately tightly in the middle and loosely at the top.

Surgical—Many operations have been devised for ptosis; some have proven a success and others a failure.

It would be a great economical factor if the public schools could adopt a system of examinations for ptosis, requiring each child to be examined every two years; and prescribing the proper attitude, exercise and diet. The diet could not be enforced but the attitude and exercise could be carried out to a considerable extent at the school.

1. Gray's Anatomy.
2. W. J. Mayo, Jour. A. M. A., P. 367, Feb. 7, 1920.
3. John T. Williams, Boston Med. and Surg., Jour., P. 13, 1915.

Discussion.

By Dr. A. L. Gray, Richmond, Va.

I don't know when I have heard a paper on this subject that has impressed me more than the paper Dr. Burke has just read. Very few of us have any very definite idea about the gastro-intestinal tract. We go ahead and treat the system for indigestion, disregarding all our anatomy and physiology.

Many of us never knew any embryology whatever, but if we did, we forget it very promptly and make no use of our former knowledge.

I know Dr. Burke handles his patients so that he gets results. There is just one little point in his paper with which I would like to take issue. He refers to a kink at the pyloro-duodenal junction. The kink is not at the pylorus, it is at the junction of the ascending and descending duodenum.

By **Dr. I. N. Upshur,** Richmond, Va.

Dr. Burke's paper struck me as embracing a great deal of industry on his part. I was sorry he allotted so much time to the hystologic side of it because I suppose I have aways had a practical trend of mind, and I am always on the alert to catch something that is going to be helpful.

It seems to me that there is no part of the anatomy that is more abused than the gastro-intestinal canal, and especially the stomach. I was very much interested in what Dr. Vanderhoof had to say in connection with that; and he used one remark which struck me very forcibly as being very frequently the means which was going to bring relief; it was what he said about the increase of fat.

Now, these deformities of the gastro-intestinal canal mean simply the result of a functional disturbance. I mean the condition where there has been a low nutrition and misplacement comes on as a result of a weakness, and conditions of that sort where absolute rest in bed and an elevation of the foot of the bed so as to give the benefit of the raised position to aid the visera just gradually to go back to the normal. But also with the complete rest and feeding which you can give these patients which will enable them to put on fat enough to support the visera which is necessary; but it is a feature of some of these cases where the visera is out of place, there may have been some condition at some time when adhesions have formed and have caused some misplacement and the rest and the appliances are not going to do anything until by surgical methods these adhesions are relieved.

Nor can you always rely on the fact that the X-Ray is going to show you what is present. Will you pardon an illustration as to this by a personal illustration? I have been one of those unfortunate people that have had a stomach all my life which has given me trouble. About three years ago I was very sick and was sent to Baltimore to see Dr. Barker. I was X-Rayed voluminously. I had fourteen or fifteen X-Ray pictures made before I went to Baltimore and nobody accused the stomach of anything wrong. When I went to Baltimore I was voluminously X-Rayed in Dr. Barker's office and his report to me was that he did not know what the trouble was. After being very sick for about six weeks I got out again, still with a sense of soreness. In September of that year I had appendicitis and went to a hospital to be operated on and I asked Dr. Horsley to please investigate that gall bladder. Now the thing he found was adhesions there. There had been some trouble in the gall bladder and some adhesions had formed between the gall bladder and the pylorus and the small end of the stomach was dragged out of place and the X-Ray did not show that it was out of place. The appendix was removed and adhesions freed with complete recovery from the stomach trouble.

I want to emphasize one fact with regard to these misplacements. Improved nutrition and gaining fat in addition to resting in bed with an elevation of the foot of the bed relieves those conditions in many cases.

I want to mention a case that came to me about three years ago of a young woman whose relatives lived in Richmond. She lived in New York. When she came to my office she had on these abominable looking French heels about three inches high. She had on a corset that struck her about the middle of the thighs and had two pads in it for the purpose of keeping the visera up, exactly the size of a brick bat. The first thing I said to her was to get a pair of common sense shoes with common sense heels on them and to take that corset off, to throw that corset away and get a simple, snug, comfortable corset. She had some little pelvic trouble, not very much. She could not eat anything, everything disagreed with her. She followed my directions about the heels on her shoes and the corset. I gave her local treatment and in three weeks' time she had put on seven

pounds. I heard from her a few days ago through a relative and I was told that she weighed 155 pounds now and was getting to be quite a large woman and has had no indigestion since.

Now these appliances which they think will hold them up, very often don't do it, but crowd them out of place and interfere with the digestion.

Discussion closed by **Dr. Burke:**

I have very little to say except to thank the gentlemen for discussing the paper and I would like to allude to what Dr. Gray has said. I spoke of the pyloroduodenal angle and I should have explained a little more explicitly what I meant by that. I think he has explained it sufficiently.

And also Dr. Vanderhoof's reference to the angle at the junction of the duodenum and the jejunum; and while that is a mechanical condition, the mechanical condition may produce an irritation of Keith's nades and this may have a great deal to do with the vomiting as long as the mechanical condition continues.

Dr. Upshur made it very plain that we ought to use more common sense in connection with all our work. That is where the X-Ray helps you very materially in showing the exact positions of these organs and by putting them in a normal position and taking the X-Ray in that position, we can see whether the organs can be supported; if they cannot be raised, of course, a pad or anything like a pressure is going to aggravate it; and if they can be raised and then put a pad on, it will help very materially.

I am very much obliged to Dr. Vaughn for his illustration of raising the umbrella. I think it is very important.

SYPHILIS OF THE STOMACH*

By Frederick C. Rinker, B.A., M.D.,
Norfolk, Va.

Today we are more interested in the attempt to relieve symptoms by first determining a pathological cause and then treating the cause, than we are in attempting the amelioration of suffering merely by the empirical uses of drugs and surgery. Indeed the laity are no longer satisfied with such evasive answers as "rheumatism," "indigestion," and many other such meaningless terms. On the other hand they want to know "what is the cause of their symptoms?"

In the search for underlying pathology, syphilis has become permanently fixed in the minds of clinicians as a possible factor in the causes of disease.

My reasons for selecting this subject for presentation to you are twofold: First, because I have had five cases of gastric syphilis during the past year who have received antisyphilitic treatment with relief. And in whom we were able to arrive at a conclusive diagnosis through the uses of the ordinary methods of physical diagnosis assisted by the laboratory and the X-ray. Second, to sound a warning to all, that any case giving a chain of symptoms suggesting ulcer, cholecystitis or gastric cancer, should never be considered surgical until syphilis has been ruled out as a cause.

Until three or four years ago syphilis of the stomach was considered more or less a medical curiosity, now it offers an alluring, difficult and yet wholly satisfying problem in the diagnosis of diseases of the gastro-intestinal tract. Barker in monographic medicine states, "Syphilis of the stomach is very rare in adults, though it may cause ulcer or gummatous infiltration.

The apparent rarity of the disease has, I believe, been due to the fact that the symptomatology and clinical findings of the condition have not been put on a sound diagnostic basis and therefore the disease has not been described in text books. Mistakes resulting from these difficulties are excusable, but it is possible that many cases of syphilis of the stomach have been either operated upon or allowed to go on into a hopeless condition because of insufficient study and consideration in an attempt to reach a pathological conclusion.

The symptoms of gastric syphilis have been described by some authors as follows: pain, tenderness over the epigastric region, at times nausea and vomiting and occasionally emaciation.

In my series of five cases, all of whom were seen during 1920, four were white

*Read before the Tri-State Medical Associatin at the Spartanburg Meeting, Feb. 16-18, 1921.

and one colored; three were male and two female; the ages were 25, 31, 34, 45 and 57 years.

Chief Complaint—Four complained of pain in the pit of the stomach and on the right side; one had nausea without vomiting; one complained of vomiting and said he had vomited blood several times; this patient also suffered from marked weakness while the others felt well except for their gastric symptoms; all of them had burning in the stomach when they went without food; four were relieved of the burning by taking either food or soda, this relief lasting only for one or two hours; all had dyspnoea on exertion; two were disturbed frequently by accumulations of gas on the stomach and intestines; three had lost from 20 to 35 pounds of weight in less than a year's time; one had gained in weight; one had had jaundice within two months prior to our seeing him; all had been somewhat nervous for several months but the nervousness was not extreme and the only thing that disturbed their sleep was either pain or nausea.

Past History—All of these cases had had the usual diseases of childhood without complications; one had had his appendix removed six months before we saw him. He stated that his symptoms had not been relieved by this operation.

Social History—Two of the men denied venereal infection; one said he had chancre at the age of 18. The wives of all three men had healthy children. Both women gave normal menstrual and child bearing histories, each having four children and one had had one miscarriage.

Family History—Unimportant.

Physical Examinations.

General Appearance—Three showed evidences of loss of body flesh; two were very pale and slightly jaundiced; all were normally developed.

Nose—One case had severe hypertrophic rhinitis.

Throat—One had badly diseased tonsils and there were white ulcerations on the pharynx and in the roof of the mouth which looked like mucous patches.

Mouth—Three cases had extensive pyorrhoea alveolaris and carious teeth.

Glandular System—One had palpably enlarged glands in the cervical, occipital and inguinal regions.

Cardio-Vascular—There were no organic lesions. The blood pressures were as follows:

Age 25—140/90.
Age 31—130/80.
Age 34—134/75.
Age 45—135/85.
Age 57—160/100.

Respiratory System—All were normal except one who showed several small areas or consolidation at both bases—suspected to be syphilitic.

Abdomen—All cases were tender over the right upper quadrant and over the epigastric region. A small irregular movable mass could be felt in the region of the pylorus in two of the cases.

Nervous System—No gross abnormal signs or symptoms.

Genitalia—No abnormalities having any bearing on these cases.

X-Ray Reports—I am indebted to Dr. S. B. Whitlock for the X-Ray work done on this series of cases.

By Fleuroscope—All cases showed the stomach to be normally placed except one in whom there was considerable gastroptosis. Two cases showed considerable enlargement of the stomach and all of them showed a constant rugged appearance on both curvatures near the pylorus. This condition was most marked on the greater curvature.

These defects in the stomach were of greater extent and more pronounced than that found in gastric ulcer cases, yet they were not at all typical of malignancy. In three instances there was a normal duodenal cap and in two there was no cap formed.

By Roentgenography—The fleuroscopic findings were confirmed. The emptying time in all cases was within six hours and in two cases it was less than four and a half hours. The intestines, in all cases, showed nothing abnormal.

Laboratory Reports.

Urine—There were evidences of a mild nephritis in one case. The renal function was within the normal limit in all cases.

Blood—There was a mild secondary anemia in three of the cases, the lowest hemoglobin being 50 per cent and the lowest erythrocyte count being 3,590,000. In two instances the lymphocytes were slightly increased at the expense of the polymorphoneuclears. There was a leucopenia in two cases, the

other leucocyte counts being within normal limits.

Blood Wassermans were all, four plus by acetone insolvable and cholesterinized antigens.

In each of these cases I felt justified in making a diagnosis of syphilis of the stomach and antisyphilitic treatment was begun.

Three of the cases have been under treatment for more than four months and so far as their gastric symptoms are concerned they state that they are cured. Wassermans made on these cases recently were negative. The other two cases have only received treatment for several weeks but both state that, following the third arsenobenzol injection, their stomach symptoms had begun to disappear.

After studying this series of cases and after reviewing a great deal of the literature on the subject I have concluded that there is no definite clear cut chain of symptoms and no conclusive clinical findings upon which we are justified in arriving at a real diagnosis, but that the diagnosis of such conditions can only be made by careful exclusion of other possibilities, the accomplishment of which can only be reached by the recording of a complete history and the doing of a thorough physical examination, these two methods being aided by the X-Ray findings and by the laboratory reports.

THE PRESENT SCOPE AND LIMITATIONS OF ROENTGEN RAY EXAMINATIONS OF THE HEAD.

A. L. Gray, M.D., Richmond, Va.

The writer has been induced to prepare this paper in consequence of numerous requests for roentgen ray examinations for conditions wholly without the range of possibility of roentgen ray diagnosis, and also in order to point out some of the conditions existing within the cranium wherein it has not been generally known that the rays are of much diagnostic value.

If one holds in mind the fact that the roentgenogram is nothing more nor less than a photographic record of differences in density, the possibilities will in a great measure reveal themselves.

Let us consider the fact that the normal head is an almost complete casing of bone presenting more or less definite variations in density, thickness, and structure in its different regions with definitely located exits and entrances through which the normal structures pass into or emerge from it on their way to or from some remote locality. This bony casing is covered by its soft tissue coat, which with its appendages produces also variations in density. The interior, however, in the normal condition appears in the roentgenogram as an entirely empty space.

The reason for this is obvious when one considers the fact that, if rays of sufficient penetrating power to pass through the two opposite walls of the skull are employed, an object within the cranium must be of sufficient density to absorb, at least to some extent, rays of this high degree of penetration, if any shadow whatever is to be recorded on the photographic plate. The normal structures have not this density. Furthermore, as the rays of the sun are scattered by the fog and the shadows, our constant companions in the sunlight, forsake us and leave us to roam unchaperoned, so the roentgen rays are scattered in passing through the mass of soft tissue and fluid within the cranium thus further preventing images of faint objects, which would be clearly recorded, if the cavity were in reality devoid of other contents.

In view of these things it is clear therefore that a pathological condition within the cranium

1. Must be of a density either greater or less than the normal intra-cranial contents.

2. Must directly or indirectly produce some change in the conformation or structure of the bony casing or

3. Must produce some deviation from the normal when a part of the fluid content is replaced by a less ray-scattering material such as air or other gas.

One would not expect then functional disorders or cellular derangements or degenerations which do not alter the density or disturb the anatomical conformation of the intra-cranial structures to be revealed by a roentgen ray examination. In certain toxic conditions, however, the probable cause may often be located at the roots of the

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teeth, in the accessory sinuses of the nose, or in the gastro-intestinal tract by a roentgenologic study of these organs.

The roentgenologist is not infrequently asked to examine a patient for intra-cranial hemorrhage. On account of the diffusion of the blood and failure to confine itself within a sharply defined area, and especially because its density so nearly approaches that of the normal cranial contents, rarely, if ever, may a clot or effusion be detected except by exclusion, taking into consideration the physical signs. In case of cranial fracture a presumption of rupture of a blood vessel may be justified by revealing the site, nature, and course of the fracture.

Perhaps the most frequent of all cerebral conditions for which the roentgenologist is consulted is epilepsy. In the great majority of these cases the plates contain nothing whatever that may be called a deviation from the normal. Much study has been done and numerous efforts have been made to connect certain appearances of and about the sella turcica with the so-called idio-pathic epilepsy, but up to the present nothing has been established. In occasional cases the conclusion of pituitary disturbance may be correctly arrived at in consequence of distortion, bridging, or other defomity of the sella and the judicious employment of pituitary feeding has resulted in amelioration or relief of the epileptiform seizures. Abnormality of the sella also not infrequently furnishes a clue to the cause of certain intractable headaches as being due to pituitary insufficiency.

The diagnosis of brain tumor by ordinary roentgen ray methods has always been very uncertain. In cases of calcification or increased density of the tumor mass its presence may be revealed with little difficulty, but few new growths are of sufficient density to cast well defined shadows. Occasionally increased furrowing and convolutional impressions on the inner table of the skull may be the result of long continued hyper-pressure of the brain cortex causing absorption of the bone at the site of the pressure. Such a condition can arise both from a growth within the brain or from internal hydrocephalus. In cases of intra-cranial hyper-pressure, especially in young individuals where the condition has developed slowly and the pressure increase has been gradual, the sutures may show evidences of separation or the cranial bones may be markedly thinned.

There may be also a localized bone destruction from the direct pressure of a cyst or new growth. This is especially true in the case of pituitary tumors, which may produce a decided alteration in the conformation of the pituitary fossa. Absorption of the dorsum sellae is by no means pathognomonic of a tumor at or in close proximity to this region, as has been the general opinion of roentgenologists. In the writer's recent experience there has been a complete obliteration of the dorsum sellae in three cases that came to autopsy. In one of these the tumor was situated in the right frontal lobe, another proved to be a cyst of the cerebellum, and the third was in the left posterior parietal region—a subcortical tumor.

When, however, the dorsum is definitely shown to be absent, it is safe to assume that there is either a brain tumor or internal brain pressure necessitating surgical intervention. It is well here to inject a word of caution lest we assume that there has been a destruction of the dorsum sellae simply because it is not visible in any good lateral plate of the head. If the angles are not just right, there may be much distortion of the sella and an entirely normal dorsum may be completely obscured.

After it is well developed, hydrocephalus is usually easy of diagnosis without the use of roentgen rays, but it is by no means a simple matter to determine whether it is internal or external in the early cases or in those cases of only a partial obstruction. In cases of external hydrocephalus it is generally possible to demonstrate by a properly made plate the fluid between the brain cortex and the cranium.

What has been presented thus far in this paper has been intended to apply to such examinations as may be made by any competent roentgenologist in his private laboratory without the aid of surgical assistance. There remains, however, a method requiring the aid of a skilled surgeon, who should have trained himself by practice on the cadaver until he is quite familiar with every point in the procedure before he

attempts to make a practical use of it on the living subject. This method involves the injection of air into the ventricles of the brain or into the spinal subarachnoid space, thereby substituting gas for fluid and rendering visible on the roentgenogram the spaces which are not demonstrable when filled with their normal contents, the cerebro-spinal fluid. This has been developed and employed by Drs. Dandy and Daetjer of Baltimore, Md., who have used it in more than two hundred cases. Since the publication of a paper in 1919 others, including the writer, have pursued this method, finding it most valuable in certain cases. By this means obstruction to the passages, dilated ventricles, tumors, adhesions, and other abnormalities hitherto undemonstrable, have been plainly shown.

It is by no means intended to convey the impression that ventriculography should be resorted to as a general procedure. On the contrary, it should be undertaken only in carefully selected cases and then by one skilled in brain surgery.

No attempt has been made in this paper to cover the entire field of roentgen diagnostic possibility in the head and so the writer has avoided any discussion of such well established uses as in foreign bodies, fractures, and diseases of the accessory sinuses, but has dealt with those conditions only which are not so generally recognized as falling within the scope of roentgenology and has pointed out and attempted to give some of the reasons for our present possibilities and limitations.

Discussions.

Dr. Barker.

Dr. Gray's paper seemed to me admirable. He has made very clear the actual information that is derivable from X-Ray studies of the head. Though he has not included the study of the paranasal sinuses I would like to emphasize one point, namely, the necessity of making a lateral view of the skull as well as an anteroposterior view for the study of the sinuses. Otherwise one cannot form the necessary conclusions regarding the state of the phenoidal sinus.

As Dr. Gray has pointed out the laity often expect roentgenologists to give them information that cannot possibly be given by the X-Ray. On the other hand much information can be given by the X-Ray of which the laity has no conception whatever.

Closing discussion on paper of Dr. A. L. Gray, Richmond, Va.

In reference to Dr. McNairy's question as to whether or not I had under my observation any cases of Mongolian idiocy—I have had only one or two sporadic cases and have had no opportunity to form any definite conclusions. My observation has been pretty nearly negative in those cases.

In regard to Dr. Barker's reference to the sinuses; that, of course, is a subject in itself and I avoided in my paper any reference to the sinuses or what might be obtained, except to mention this as one of the well known cases. I absolutely agree with Dr. Barker that it is exceedingly unwise to rely upon one postero-anterior view. A lateral view is necessary to obtain the depth of the sinuses and the thickness of the bony walls. Without this information, it is impossible to determine whether a difference in density is due to fluid or other material in the sinuses or merely to a difference in thickness of the walls.

Another point: We are very often asked to make stereoscopic plates of the pituitary fossa. Now, if we happen to get these plates made exactly right, they will show up the pituitary fossa to excellent advantage and will tell whether we have a normal sella or not; but if we don't get them exactly right, we may not be able to see the pituitary fossa anything like so well as we would in a single lateral plate made strictly and absolutely at right angles to the pituitary fossa. So in many instances I have had to resort to a single lateral plate to determine whether my stereoscopic plates were right or not. My routine is this: I generally make one plate with the tube immediately over the sella, the patient being in the lateral position, while the other one is 2½ inches away.

Just one other point: A great deal of reference has been made to the appearance of the posterior clinoid processes. You know that the posterior clinoid processes are on the dorsum sellae; they project backwards. The anterior clinoid processes are formed by the projection of the lesser wings of the phenoid. You must have a very unusually good X-Ray plate in order to be able to

see whether you have any posterior clinoid processes at all. A great many references are made to these processes when they really mean the dorsum and not the clinoid processes at all.

MIGRAINOUS AND PITUITARY HEADACHES CONTRASTED*

J. Allison Hodges, M.D., Richmond, Va.

Headache is the most common of all nervous symptoms, and no symptom requires more careful investigation as to its etiology, for the diagnosis is always to be made, not of this symptom, but of its basic cause.

Headache, then, is not a disease, but merely a symptom, and great care should be exercised to distinguish between functional disturbance on the one hand, and organic intracranial processes on the other, which may be the causative agents in the production of this symptom.

For our present consideration, we will briefly contrast migrainous and pituitary headaches, for both are grave as to their prognosis, and uncertain as to their cure, unless early recognized, and properly classified.

First, Frequency — The migrainous type of headache is more frequent than the pituitary, for, generally speaking, most of the persistently recurrent headaches are of migrainous origin.

Second, Location — The migrainous headache is generally unilateral, sometimes occipital, while the pituitary is frontal, fronto-occipital, or bitemporal.

Third, Character of Pain—The migrainous headache is pulsating, throbbing and paroxysmal; the pituitary, is constrictive, squeezing and persistent.

Fourth, Duration — The migrainous headache is quasi-periodical, occurring at intervals of days or weeks and lasting six to twenty-four hours, the patient, between attacks, being entirely free of local pains, and, after attacks, apparently better than before the attack, while in pituitary cases, there is no periodicity, the average patient suffering more or less constantly all the time.

Fifth, Sex Occurrence — Migrainous headaches occur oftener in women than in men, in the proportion of about three to one; while the pituitary, though showing about the same proportion in the sexes, is of less frequent occurrence numerically.

Sixth, Constitutional Type—Migrainous headaches occur in neurotic patients and families, and there is very often a history of direct inheritance; pituitary headaches have no heredity, and occur invariably in patients with pituitary dysfunction and the classical pituitary signs, such as abnormalities in body hair, too much or too little, irregularities of the teeth, certain changes in bodily bone development, and increased sugar tolerance, and other disturbances of nutrition, such as adiposity and changes in secondary sexual characters forming the Frolich syndrome.

Seventh, Associated Symptoms — In both migrainous and pituitary headaches, there are associated with the localized pain, two common symptoms, namely, nausea and vomiting, but these are more frequent in the former, and generally terminate each paroxysm, while they are not in evidence in the latter generally, until the cases have continued for a long time.

Migrainous headaches are often, also, accompanied by dimness of vision, by flashes of light, or by dark or light spots, variously colored, floating before the eyes, and sometimes by a temporary total hemianopia, but pituitary headaches are never preceded nor accompanied by a visual aura in the form of a scintillating scotoma, though in the case of pituitary tumor, there may be permanent bitemporal hemianopia.

Also, while vertigo, tinnitus aurium, confusion of ideas, disturbances of memory, etc., are not uncommon in migrainous headaches, these associated symptoms are entirely lacking in pituitary headaches.

The systolic blood pressure is also generally increased in migrainous headaches, especially at the time of the attack, while in pituitary headaches it is uniformly low.

Eighth, Pathology—The most plausible theory for the causation of migrainous headache, there being no morbid anatomical changes, is that it is, in large measure, a fulgurating neurosis, having its site in the cerebral cortex, or possibly, in the primary sensory centres, from which there are periodical

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discharges of nerve force, and that these are precipitated by the presence of an excess of some endogenous toxin in the intestinal tract. On the other hand, pituitary headache is not the result of such functional disturbance, but is due to anatomical abnormalities which, in part, interfere with the proper functionation of the pituitary gland, this type of headache being due to an altered secretion of the pituitary, which causes swelling and consequent permanent enlargement of the gland. Whether this enlargement is caused by some compensatory demand upon this gland, because of dysfunction of the thyroid or suprarenal glands, or the insufficiency of the adrenals, is not definitely known, but the fact remains that the pituitary gland in many cases does enlarge, and because of its anatomical position, and consequent constriction in a bony enclosure, especially when the clinoid processes are abnormal, or the fossa is limited in size, and sufficient space is not allowed, except laterally, for this new growth to expand, consequently, there must arise pressure symptoms and resultant localized pain.

Ninth, Therapeutic Response — Migrainous headaches are rebellious to a degree to all treatment, whether symptomatic or constitutional, while pituitary headaches, in properly selected patients, are uniformly responsive to glandular therapy in proper dosage, usually two grains of the pituitary extract, administered four hours after meals, and continued over a long period, and increased or decreased according to developments in the individual case.

Tenth, Summary—Of the two types of headache now being considered, the migrainous is the result of a constitutional neurosis; the pituitary is the result, physiological in part, and in part pathological, of enlargement of the pituitary gland, situated, as it is, in bony and unyielding walls which do not allow symmetrical development, and consequently, pressure symptoms are produced.

Migrainous headaches occur paroxysmally in neurotic individuals, often with a history of direct heredity, and at any time of life, and are congestive in type, and characterized by periodical attacks of pain, continuing for variable periods in the course of the fifth nerve, and often associated with nausea or vomiting, and various vasomotor disturbances, which are intractable to treatment.

Pituitary headaches are localized and persistent in type and occur in patients showing the clinical dyspituitary disorders named above, and because of dysfunction of the pituitary gland in these patients, there occur pressure symptoms of headache, vertigo and vomiting, which are usually relieved by continuous and proper glandular feeding.

The prognosis in migrainous headache is uncertain and discouraging, and generally irresponsive to any treatment before a patient is forty years of age, and after that age, approximately, there may be improvement, or sometimes, spontaneous recovery, while in pituitary headache, the prognosis is favorable and satisfactory, if treated early by appropriate glandular extract.

This brief contrast of the characteristics of a "symptom," present in both a functional and in an organic nerve condition, is offered for its suggestive purposes, and to arouse scientific interest in earlier diagnoses of such cases by the profession.

SYMPTOMS OF HEART FAILURE*

By M. C. Palmer. M.D., Spartanburg, S. C.

To go into detail and describe all symptoms of heart failure would be inappropriate at this time. In this brief paper I shall touch on some of the symptoms that frequently confront us.

The heart, when the body is at rest, is called on for the minimum amount of force. When the body is functioning, more force is required. The difference between the force exerted by the heart when the body is resting and that exerted when it is called on by the organism to function at its extreme limit, is known as the reserve force. As soon as the limit of reserve is past, symptoms and signs of inefficiency or failure appear. There may be many obstacles in the way of the maintainence of normal circulation such as sclerosed ar-

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teries, diseased valves, increased tension, etc., and still no failure exist. When the heart is unable to keep the blood circulating in the normal manner while the individual fulfils his vocation, it may be said to fail.

This failure is made evident through certain more or less well defined symptoms and signs which may be exhibited directly by the heart's changed action and indirectly by evidence of impairment of function in other organs. This evidence is manifested subjectively and objectively. Of these, from the practical point of view, the information gained from the patient is of more importance. The objective signs are tangible when present but the work done by each individual varies. An accurate conclusion as to the degree of failure cannot be drawn until the patient has been questioned as to habits of daily life; the distress or ease with which he is able to do his work. It is this inquiry into the response of the heart to the demands of the various organs while functioning that gives light and makes possible the true determination of the degree of failure.

When the heart begins to fail, the blood flows slower than is required owing to the lack of sufficient vis-a-tergo. There is a degree of stasis present. All are familiar with the stasis evidenced by edema of the extremities, cyanosis of the skin and edema of the lungs accompanying advanced heart failure. It is not universal, however, to associate hemorrhoids, constipation, enlargement of the liver and other evidence of stasis in the visera with heart failure.

Perhaps the symptoms of cardiac insufficiency which most frequently bring patients to us are those of the respiratory system. The stasis around the respiratory center leads to too much carbonic acid and too little oxygen. Owing to this we have breathlessness, air hunger, inability to stop breathing, etc. There may be simply an increase in the frequency of respiratory movements when lying quiet. This may be an early symptom in wasting fevers such as typhoid, or in elderly people, or in valvular leisions. On the other extreme we note the continuous labored breathing of the very advanced heart failures. The amount of exertion required to bring on labored breathing is a rough indication of cardiac reserve force. Cardiac asthma, characterized by sudden onset of labored breathing, cyanosis profuse perspiration, the urgent desire to assume the sitting posture, and the coughing up of a frothy blood-stained mucous, is seen in the arteriosclerotic types. It is a grave symptom. Acute suffocative edema of the lungs closely resembles cardiac asthma except that the fluid from the mouth and nose is more profuse. Back pressure, seen in mitral stenosis in the young and in the dilated hearts of the older patients, with the attendant pulmonary stasis, gives rise to a varying degree of hemoptysis.

Dizziness, seen in paroxysmal tachycardia, sudden assumption of the upright position, heart block, etc., is due to cerebral anemia. When the blood is very markedly diminished, there is loss of consciousness. In very extreme anemia there are convulsions. In cases where the blood supply to the brain is continuously sluggish the patient complains that he is easily fatigued, that it is hard for him to remember recent events or what he reads. In advanced degrees of heart failure there are often hallucinations of sight and hearing.

By various experiments, it has been found that there is no pain coming directly from injury of the heart in any part. Heart muscle therefore can not be said to give pain directly and when it is found in connection with heart failure, it is due to a reflex. The heart in trouble notifies the structures round about it through the medium of the sympathetic nervous system, with which the vagus is in very intimate communication. This connection is especially well developed between the vagus and the nerves supplying the region of the left breast and the inner side of the left arm and hand which fact determines the location of the pain in the greatest number of cases. In addition to the pain there is often hyperalgesia of the muscles and skin. The intercommunication of the nerves of the whole upper part of the body and the vagus is such that any pain, sharp or dull, paroxysmal or steady, occurring about the chest, arms, epigastrium or neck should be investigated as to its starting point and radiation and as to its relationship to rest and exercise.

PAIN AS AN EARLY SYMPTOM OF SEPARATION OF THE NORMALLY SITUATED PLACENTA IN THE LAST MONTHS OF PREGNANCY—REPORT OF CASES*

By I. P. Battle, M.D., Rocky Mount, N. C.

In reporting the following cases it is my desire to emphasize the importance of the symptom pain, as it is the first warning of a not infrequently fatal condition. (1) In 1900 Holmes collected 200 cases of this condition and suggested the name "ablatio placentae." (2) Edgar states that this condition is probably much more common than is usually supposed. He gives the ratio to normal labor as 1 to 200. This figure seems rather high when we consider that the much more commonly discussed condition placenta praevia is given a ratio to normal labor of 1 to 1500. As to pain he says "There is generally pain which is at times persistent and of a tearing, piercing character, or cramp-like, colicky and bearing-down. The suffering varies greatly in different cases. Pain may be localized at the placental region or at the lower uterine segment, due to stretching from retained clots."

De Normandie in "Case Histories in Obstetrics" reports two cases well illustrating this condition, and in his summary states "Pain is another symptom which is always present. This may vary from simple discomfort to severe cramp-like pain localized at the point of separation of the placenta from the uterus, in other words at the seat of the hemorrhage." In one case he states that pain occurred two hours before external bleeding occurred. In the other no mention of history of pain is made. Because it seems to me that this symptom and the time of its occurrence is not stressed quite enough by the writers on obstetrics, I feel justified in reporting the following cases. Cases one, three, and five are sisters:

Case 1—Mrs. G. D. C., white, 34. Three children, living and well. None dead. No miscarriages. Had no serious illness except appendicitis, for which she was operated upon in 1913. No complications with former pregnancies or labors. No history or evidence of syphilis. I was called to see her Oct. 17, 1916, about 10 a. m. She was about seven months pregnant and had been feeling fairly well and able to attend to her household duties until an hour before my visit, when she began to suffer with a moderately severe pain well localized to the right of the fundus. Her lower extremities were oedematous. Skin was a muddy yellow. There was no appreciable tension of the uterus, no doughy feeling, no external hemorrhage nor symptoms of hemorrhage. She was not in labor. The true condition was not suspected. Camphorated tincture of opium, 1 dram every two or three hours as necessary, was ordered. Two hours later at 12 o'clock I was called again. At this time she complained of very severe pain sharply localized in the same area. The pain had not been relieved at all by the two drams of paregoric. No new physical signs could be made out and the condition was mistaken for gall stone colic. Morphine grains 3/8 was given hyperdermically and her husband directed to call me if she did not get relief, or if the pain returned. At 6 p. m. he phoned that she had been relieved soon after my second visit and was resting quietly. Six hours later at midnight her husband was awakened by a groan and found her in a semi-conscious condition on the floor. The commode she had just used contained considerable blood, and her clothing was saturated with blood. Upon arrival about thirty minutes later I found her with the usual symptoms of hemorrhage of a severe nature, but entirely rational. There had been very little external bleeding after she had been put to bed. The cervix was well thinned out and admitted three fingers, and the membranes bulging through it. A small amount of chloroform was given and version performed as rapidly as possible. The uterus contained a quantity of clotted blood. The exact location of the placenta was not determined. Following delivery the pulse was rapid but had fair volume and it did not seem that the hemorrhage was necessarily fatal. An hour later she became extremely restless and had to be restrained. Morphine sulphate grains ¼ was given and repeated in half hour with no effect. The last half hour she had to be held

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on the bed and was in a delirium. Two hours after labor she had a hard convulsion and died almost immediately.

Case 2—D. V., colored, age 40, eight children living and well. One child died at the age of ——, one of pneumonia. One died at the age of six of malaria. In July, 1915, I delivered her of a badly macerated foetus about the size of the average foetus at six months. She was positive that she had carried this child for nine months. There were no complications with the pregnancies or labors prior to this time. There was no history of past illness of serious consequence. No history or evidence of syphilis. In the afternoon of July 28, 1917, I was called to see her and found her suffering with a sharp, severe, well localized pain extending over an area about six inches in diameter to the right and slightly below the upper border of the fundus. She was eight months pregnant. There was no dilitation of the cervix, no uterine contractions, no doughy feel to the uterus, nor distension of the uterus. There was no hemorrhage externally nor symptoms of internal hemorrhage. Bearing in mind the previous case, premature separation of the placenta was suspected. Morphine grains ¼ was given and the attendant instructed to watch for symptoms of internal hemorrhage. At 6 a. m. the following morning I was called to see her and found a markedly distended uterus and all the symptoms of internal hemorrhage. The cervix was still tightly closed and there had been no labor pains. The attendant stated that she had rested comfortably following the hypodermic until about 3 a. m., when she began to complain with general abdominal pain. She was immediately taken to the hospital and Cesarean performed by Dr. B. C. Willis. The tissues of the abdominal wall were very oedematous and almost bloodless. The uterus showed marked subperitoneal hemorrhage above and to the right. This area corresponded exactly to her location of the pain and proved to be the sight of the placenta. Upon opening the uterus it was found full of clotted blood and fully half of the placenta was detached. The baby of course was dead. The patient progressed favorably until the eighth day following operation when sneezing caused about one-half of the abdominal incision to open, there having been no union in the oedematous walls though the wound was clean. The wound was again closed with through stitches of silk worm gut and the patient made an uneventful recovery. At the present writing (Feb., 1921) she is in good health and has no sign of ventral hernia.

Case 3—Mrs. H. O. C., white, age 36, five children are living and well. None dead. No miscarriages. Past history is negative except the first labor, which was a difficult forceps with a bad tear that was repaired with poor results. I was called to see her on May 11, 1919, at 8:30 p. m. While walking across the room she had a sudden gush of blood, losing perhaps about a pint and a half. She gave a history of having had a rather severe pain in her upper abdomen on the right side at 10 a. m. of the same day. The pain passed off in about half hour without the use of any opiate. During the afternoon she had experienced a sense of increased fullness and weight about her abdomen, but no other discomfort. Examination showed a large doughy uterus. The cervix was thin and admitted two fingers. There was no placenta previa. A diagnosis of premature separation of the normally placed placenta was made and version under chloroform performed. The exact attachment of the placenta was not determined. The uterus contained numerous blood clots. The baby was dead. The patient reacted from the chloroform and her pulse though rapid had enongh volume to justify the opinion that the amount of hemorrhage was not necessarily fatal. Like Case No. 1, however, she soon complained of violent headache and became extremely restless, having to be restrained to keep her on the bed. During the last half hour of her life she was profoundly unconscious with stertorous breathing. She died four hours after delivery.

Case 4—Mrs. J. A. M., white, age 33. Past history negative. Seven children living and well. None dead. No history of complications with previous pregnancies or labors. No miscarriages. On Oct. 11, 1919, I was called on account of a severe abdominal pain in her right side extending over an area about the size of her hand and reaching above to the level of the fundus. She was at term. Physical examination revealed nothing else but a moderate oedema of

the lower extremities, face and hands. She was given morphine grains ¼ and the attendant instructed to watch for signs of hemorrhage, internal or external. She was soon relieved, however, and had no further trouble until Oct. 14th, three days later, when I attended her through a perfectly normal labor. On delivering the placenta, I noticed about a half inch from the margin a black clot about two and a half inches long and about three-quarters of an inch wide. She made an uneventful recovery.

Case 5—Mrs. E. H., white, age 36, a sister of cases one and three. Seven children are living and well. One child died in infancy of congenital heart. No miscarriages. All previous labors and pregnancies normal. Past history essentially negative. Dec. 30, 1920, I was called to see her at 9 p. m. on account of severe pain in the upper right side of abdomen. She was about eight and half months pregnant, but not in labor. Morphine sulphate grains ¼ was given and the patient taken to the hospital for close observation. She was soon relieved and there was no return of the pain. Twenty-four hours later she showed marked signs of impending eclampsia and labor was induced. With the exception of its induction labor was normal in every respect and she was delivered of a living child at 9 p. m. Jan. 1, 1921, or forty-eight hours after the localized abdominal pain. Immediately after delivery the placenta was seen to contain three small black clots a little to one side of the center. Mother and child with the exception of minor complications made an uneventful recovery.

These cases well illustrate this condition in its mildest and severe forms. It is comparatively rare in primiparae. All but case two showed varying degrees of toxemia of pregnancy. In case two it was possible to prove that the location of pain corresponded exactly to the location of the placenta. When we consider that the fundus receives its nerve supply through the sympathetic it is an interesting fact that this is a direct and not a referred pain.

The point that I wish to emphasize, however, is the time of the pain. In the three serious cases there was an interval of approximately twelve hours in each between the beginning of the pain and evidence of grave hemorrhage. Granting that the hemorrhage was gradual still if we had only half this time we would still have six hours in which to make necessary arrangements for the form of rapid delivery of election.

In conclusion, this condition should be suspected in any woman in the last months of pregnancy, who complains of sharp well localized abdominal pain. She should immediately be removed to a hospital, watched closely and preparations made for Cesarean. This operation offers better chances of recovery if the cervix is not easily dilatable. If it can be done rapidly and with ease as when the cervix is well thinned out and easily dilatable, version is the operation of choice.

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1. Holmes, "American Journal of Obstetrics," Vol. XLIV, 1900.

2. Edgar, "The Practice of Obstetrics," Second Edition.

SOME PERFORATING WOUNDS OF THE EYE*

By H. S. Hedges, M.D., Charlottesville, Va.

We wish to report briefly three cases of perforating wounds of the eye—the first because it so well illustrates the importance of early recognition of serious eye symptoms by the general practitioner, and again because it may be of interest to the attending oculists on account of the length of time that the eye has been under observation since the injury; the second to sound a warning as to prognosis in what at first seem insignificant injuries; the third, because the eye is still under treatment and I do not feel sure that I have handled it in the best possible way, and ask your candid opinions to help us in the matter.

Five years ago a girl of 4 was sitting by a window protected by a wire screen when she was struck in the left side of the neck by a .22 calibre bullet. The ball passed through the neck, and cut through the upper border of the trapezius.

*Read before the Tri-State Medical Association at the Spartanburg meeting, Feb. 16-18, 1921.

When the attending physician, Dr. Wilson, dressed the wounds, he noticed what seemed to be a slight scratch on the middle of the left lower lid; but as the eye was apparently uninjured, and the child made no complaint about it, no attention was paid to it.

A week later, however, when about to discharge the case—the wounds in the neck had healed promptly—Dr. Wilson noticed that the left eye looked a little watery, that there was some photophobia and slight circumcorneal injection. It was not marked, the eye showed no sign of a wound, and the child made no complaint except for the slight photophobia.

The next day she was brought to the University of Virginia Hospital, showing symptoms as above described—perhaps a little more marked. Pupil was rather small, media clear, vision could not be gotten, as she refused to talk.

What seemed to be a scratch on the lower lid had healed, and the anterior segment of the ball showed no wound that could be seen.

With dilated pupil, a slightly raised, glistening white area, rather larger than the disc diameter, could be seen in the upper nasal quadrant of the fundus.

X-Ray plates showed what seemed to be a bit of wire located in the same area.

Under general anaesthesia a small conjunctival flap was turned outward between the superior and internal recti, a little in front of the equator, a crucial incision was made through the sclera, trying to cut through the membrane without injuring the underlying choroid. The small tip of a Johnson's hand magnet was then applied to the incision and the current turned on several times without success. The tip of the magnet was then inserted four or five millimeters, and the wire was at once delivered. It was about 5 mm. in length, and had evidently been broken off the screen by the ball.

Conjunctiva was sutured, atropin instilled, and the eye bandaged. There were no complications, and the child left the hospital in four days.

We saw the child a few weeks ago. She now has 20/20 vision in the injured eye, and the fundus shows no sign of any lesion.

Just where the wire penetrated the ball we could never tell: it must have been posterior to the ciliary region, we think.

At any rate, had Dr. Wilson not promptly recognized that the ciliary injection meant real trouble somewhere, we would not have seen the eye till plastic exudate had so firmly sealed in the wire as to make removal far more difficult and prognosis far worse; or perhaps not till the disastrous effects of siderosis had become well marked.

The good result was doubly fortunate as the right eye is amblyopic, and tends to squint, and vision of injured eye is now full 20/20.

Case 2—School boy of 14. Well grown, healthy. Thursday evening, Nov. 22, was struck in the right eye by a steel drawing tack which he had pushed in to the wall of his room to hold a cord that held his light in position.

Wishing to change his light, he jerked the cord, and the tack flew back and struck him.

It gave him but little pain, and did not interfere with vision, but the next day he was sent to us for examination. You could barely see the wound of entrance, near the outer border of the right corner, on the horizontal meridian. The anterior chamber was clear, pupil slight acentric. There was a clean-looking tear in the iris, about three mm. in diameter, back of the wound in the corner. Vision normal, fundus clear.

The eye was carefully cleaned, atropin instilled, and the boy put to bed in the hospital, with orders for cold compresses should there be any pain.

Next day the eye was quiet, no pain and but slight localized injection. Temperature normal. As he was very restless and dissatisfied in the hospital, we let him return to school that morning—school was only a short distance away—to report if any trouble developed.

That night the eye began to pain, and temperature rose to 99.5 degrees. By morning the eye was red and painful. Temperature higher, so he was at once sent back to us. We found marked systemic disturbance, temperature —, pulse —. Pupil contracted, aqueous so turbid that we could not see fundus, and tension, marked echemosis of conjunctiva, and beginning swelling of the lids—in short, a rapidly developing panophthalmitis.

His parents were sent for at once, but would not at first consent to operation. He grew rapidly worse, and was fast approaching the condition in which we hesitate to enucleate before they would consent to have it done.

After simple enucleation recovery was uneventful.

We cite this case not because it is unusual, but to show how guarded our prognosis should be in case of any perforating wound of the ball, even if made by an apparently clean instrument.

For 36 hours the eye showed no irritability. In 48, a well developed panophthalmitis was under way.

Case 3—On Oct. 7, Helen Y., an unusually sturdy looking child of 10, fell among some woods and said that she had scratched her eye. No attention was paid to it for several days, when it began to be uncomfortable, and she was brought to us.

Left eye showed considerable ciliary injection, slightly infiltrated spot on cornea marking wound of entrance at about 1 o'clock, midway between center and periphery. From the back of the cornea an infected tract ran backward and upward to near the base of the iris, where it seemed to branch and looked much like a colony of some molds growing in a culture medium.

The eye was cleansed, atropin instilled, and the eye kept quiet under a bandage till the next day. (Unfortunately no culture was made from the wound of the cornea). Pupil was then well dilated, cornea clearer, injection less, and the band connecting the back of the corneal wound with the mold-like mass on the iris had parted, leaving a rounded, greyish-yellow mass 2 or 3 mm. in diameter seated on the front of the iris, near the base.

Vision was normal, but we told the parents that the prognosis was bad.

Under atropin and rest, however, the eye cleared surprisingly, though the fibrinous mass on the iris remained.

On Dec. 1 we stopped atropin, but kept up hot compresses several times a day. Vision of injured eye 20/30.

On Jan. 27 returned with recurring ciliary injection, but no pain. Rest, atropin and hot applications continued with renewed improvement up to when a sluggish uveitis again developed.

Today the mass on the iris has disappeared, but the media look a little hazy, and vision is down to 20/70, due partly to the corneal scar, partly to the uveitis, we suppose.

This is an eye which at first we thought absolutely hopeless, and yet it has kept us alternating between hope and fear ever since. At times it has looked as bright as could be. At others it has looked like an eye developing a uveitis that might damage the other eye.

When we first saw the eye, we were sorely tempted to open the anterior chamber and let it drain.

Would this have been advisable? We did not do it for fear that it would only scatter the infection more widely. The outlook still is serious.

She is now on atropin, hot stupes, and mixed treatment internally.

Any suggestions would be gratefully received.

Original Communications

THE RELATION OF SYPHILIS TO INFANT MORTALITY.*

By Millard Knowlton, M.D., C.P.H.,
Regional Consultant, United States Public Health Service,
Director, Bureau of Venereal Diseases, North Carolina State Board of Health.

The term infant mortality refers to deaths under one year of age. Since stillbirths are recorded as such and not as births and deaths, they are not included in infant mortality. (1) Miscarriages during the early period of gestation are not recorded at all.

It is a striking fact that approximately 48 per cent of all deaths under one year occur during the first month of life. (2) More than half of all such deaths occur during the first six weeks after birth. These figures serve to focus attention upon the problem of saving babies under one month of age. Deaths during this early period are due chiefly to prenatal causes. In order to know what preventive measures will be effective, it is necessary to inquire into the nature of these causes.

Grouping all the deaths under one year in a few simple groups as to cause, gives us the following approximate percentages of such deaths from different causes in the United States registration area for 1919: (2)

43 per cent from natal and prenatal causes.

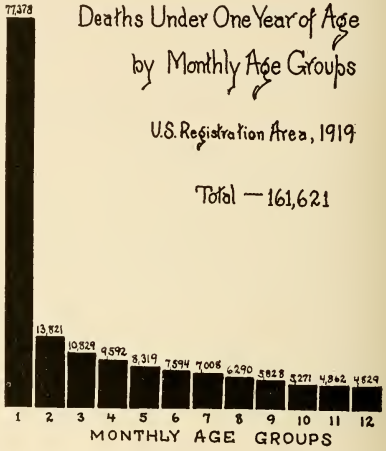
20 per cent from gastro-intestinal diseases.

15 per cent from respiratory diseases.

10 per cent from epidemic diseases.

12 per cent from all other causes.

Thus it appears that by far the largest group of deaths under one year is related to natal and prenatal causes. Inquiry as to the nature of these causes soon leads to the discovery that syphilis is one of the important factors. Not only is syphilis an important cause of death soon after birth, but it is also an important cause of stillbirth and of miscarriage.



Our knowledge concerning the relation of syphilis to infant mortality is as yet very incomplete. Statistical data bearing on the subject are fragmentary, and are often the result of special selection, so that general conclusions may not be justifiable. Dr. P. C. Jeans of St. Louis, who has made a careful study of the problem, gives the following summary of available data: (3)

From 10 to 20 per cent of adult males and about 10 per cent of married women are syphilitic and a minimum of 10 per cent of marriages involve a syphilitic individual.

Seventy-five per cent of all the offspring in a syphilitic family are infected.

In a syphilitic family 30 per cent of the pregnancies terminate in death at or before term, a waste three times greater than is found in non-syphilitic families.

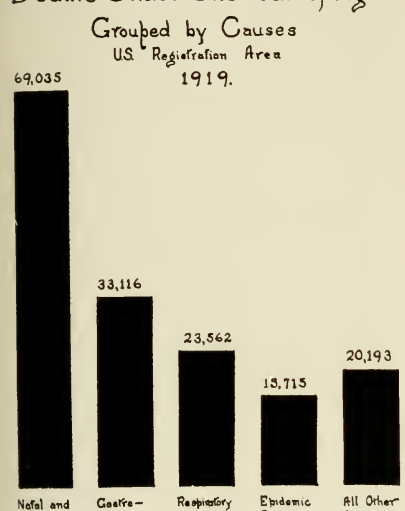
Thirty per cent of all the living births in a syphilitic family die in infancy as compared to a normal rate of 15 per cent in the same class.

*Read before the Section on Public Health and Education of the Medical Society of the State of North Carolina, Pinehurst, April 26, 1921. Certain statistical data for 1919 have been obtained and substituted for similar data for 1916 in the paper as originally read.

Probably 25 to 30 per cent of clinically syphilitic infants die as a result of syphilis.

But 17 per cent of all the pregnancies in syphilitic families result in living non-syphilitic children who survive the period of infancy.

About 5 per cent of our infant population is syphilitic.



According to St. Louis vital statistics, 3½ per cent of all infant deaths are ascribed to lues.

The following additional data is furnished by various authors: (4)

Spaulding (5) reports that 600 children with venereal diseases were treated in the Cook County Hospital in twenty-seven months.

Stokes (6) says that 75 per cent of children of syphilitic parents die before birth or during their first year.

Routh (7) says that 20 per cent of foetal deaths are caused by syphilis.

Wile (8) is quoted as saying that the infant mortality rate is higher in syphilis than in scarlet fever, diphtheria, influenza or tubercular meningitis.

DuBuys & Loeber (9) report that 83.96 per cent of foundlings in the institution studied showed congenital syphilis. (This percentage is based on a positive luetin reaction in 79 cases or 74.53 per cent and on clinical findings in 10 cases or 9.43 per cent of the 106 cases studied. All gave a negative Wassermann.)

Spohr (10) quotes European and American statistics giving the incidence of syphilis among the new born as ranging from 6 to 35 per cent. (Special selection is evidently responsible for some of these higher percentages.)

Findlay (11) is quoted as saying that 20 per cent of all pregnancies terminate by miscarriage or death of child, and that 75 per cent of all deaths from syphilis occur in children under five years of age.

Williams (12) reports that 183 out of 705 stillbirths were caused by syphilis. (This gives a percentage of 26.)

Bertin (13) thinks that neurosyphilis causes 30 per cent of epilepsy and idiocy.

Various authors (14) find that from 42 to 60 per cent of mentally defective children have positive Wassermanns.

Osler (15) is quoted as saying that more families in the community are tainted with syphilis than with tuberculosis.

Osler's (16) arraignment of syphilis as a destroyer of infants is particularly drastic as is shown by the following quotations: "Syphilis is perhaps the most common cause of abortion." "When I was a pathologist and physician to an infant's home, we did not have—nor did we need—Schaudinn or Wassermann or Noguchi to tell us of what 95 per cent of infants died during the first month. Jonathan Hutchinson and Parrott and Diday and Fournier had told us that." Osler estimated that at least 20 per cent of the stillbirths and between 15,000 and 20,000 of the 90,000 deaths of infants within the first year reported in England for the year 1915 were due directly to syphilis.

With reference to the incidence of syphilis nearer home, Royster (17) reports the results of a routine Wassermann upon all children brought to the King's Daughters' Children's Clinic at Norfolk for treatment of any kind as follows:

Percentage of positives among 341 white children, 7.04.

Percentage of positives among 659 negro children, 15.47.

Total percentage of positives, 12.5.

Dr. J. Whittridge Williams (18) reported to the New York State Medical Society that among 4,000 (1,839 white —2,161 black) consecutive deliveries in Johns Hopkins Hospital in the period preceding December 31, 1919, there were 302 foetal deaths. Careful study revealed that syphilis was the cause of 104 or 34.44 per cent of these deaths. It was the cause of 12.12 per cent, or one of every eight, of the deaths among the whites and 45.23 per cent, or almost half, the deaths among the blacks. Of these 4,000 mothers, 421 had a positive Wassermann reaction and antiluetic treatment was begun as early as possible. Some cases came under observation too late for the treatment to have any value, but some idea of the effects of antiluetic treatment can be observed if the patients be divided into three groups as follows:

Group 1. In this class there were 157 women who received no treatment and 52 per cent of the children were born dead or presented some evidence of syphilis.

Group 2. In this class there were 103 women who received only two or three injections of salvarsan and no after treatment and 37 per cent of the children were born dead.

Group 3. In this class there were 163 women who received satisfactory treatment achieving a negative Wassermann and but 7.4 per cent of the children were born dead.

From this study Dr. Williams concludes, "The evidence at our disposal shows that if syphilis is recognized early in the pregnant woman, and is intensively and appropriately treated, almost ideal results may be obtained as far as the child is concerned."

From this hasty and rather fragmentary survey of the problem it is quite apparent that there is much work to be done in the reduction of infant mortality through the prevention of syphilis. Essential factors in the prevention of syphilis are the discovery and proper treatment of adult carriers. To bring about this result an educational campaign designed to cause infected persons to seek treatment is of fundamental importance. This may be considered as a function of the health authorities. As physicians, the readers of this article will be especially interested in the medical aspects of the problem. Accordingly, I wish to emphasize a few points on the medical side:

1. In the first place let me urge the importance of adequate medical service available to all citizens of the state. By this I mean enough medical practitioners with special knowledge of syphilis so distributed over the state as to be accessible to all infected persons. Where possible it is preferable in the interest of public economy to have infected persons treated as private patients who pay for their own treatment. When necessary, patients should be treated at public expense to protect the public health. Responsibility for such treatment is placed by law in North Carolina upon the county.

2. In the next place let me strongly recommend that every member of a syphilitic family be examined for possible syphilis. It is a simple matter to examine for clinical evidence of syphilis and take a specimen of blood for a Wassermann test. In the interpretation of Wassermann results, it is well to remember that perhaps 15 or 20 per cent (about 5 per cent of untreated cases and 25 per cent of partially treated cases) of active tertiary syphilis will give a negative Wassermann reaction. But the Wassermann test will pick up a large number of cases that otherwise would escape notice. Certainly every member of the family of a syphilitic should be subjected to the Wassermann test, whether clinical symptoms are present or not.

3. In this connection it should be remembered that syphilis is syphilis no matter in what stage it occurs. Thus a patient suffering from paresis, tabes, syphilitic aortitis or other late manifestation of syphilis, is syphilitic just the same as a patient with florid syphilis. All members of the families of such patients should be examined for evidence of syphilis.

4. Syphilis is so frequently the cause of miscarriage, stillbirth, or death after birth from congenital debility, that it is advisable to make a Wassermann test of the parents in such cases. This procedure will result in discovering a syphilitic cause in a large number of cases where it is present, and thus permit giving specific treatment.

5. If one accepts at its face value the statement that 10 per cent of married

women are syphilitic, it might be worth while to consider the advisability of a routine Wassermann on all pregnant women who come under observation prior to childbirth. Certainly wherever there is a history of previous miscarriage or other reason for suspecting syphilis, both a clinical examination and a Wassermann test are indicated. In all cases where syphilis is discovered in a pregnant woman, vigorous treatment should be administered. Treatment at this time treats two, mother and child.

6. As a general measure of protection for future children very careful attention should be given to all cases of venereal sore. Every such sore should be examined repeatedly by the "dark field" method for the treponema pallida before a diagnosis of chancroid is accepted. It is the early diagnosis of syphilis that gives the best hope for a speedy recovery.

7. Let me emphasize also in the interest of future children the importance of thorough treatment of syphilis. Ehrlich's dream of a complete sterilization of infected persons by the destruction of all spirochetes with a single dose of arsphenamine has vanished in the light of experience. There is yet too great a tendency, however, to stop treatment as soon as one course of treatment has caused the symptoms to disappear. Such a policy frequently permits a relapse and then the second state of that man is worse than the first. Had I the power to do so I would indelibly impress upon your minds the necessity for thorough treatment, as well as for early treatment, in the interest of the patients themselves, their associates, and their children.

In conclusion it appears that syphilis is an important factor in the waste of infant life, especially before birth and during the first month after birth. It follows that the prevention of this unnecessary waste is possible only by the prevention of syphilis. This king among diseases, that ranks with tuberculosis as a cause of death, is unique in the destructive force it carries to the next generation with such havoc to unborn and new born children. If the germ plasm of the race is to be protected against its ravages, it is necessary to give attention to the adult carrier. The prevention of syphilis among infants and children is possible only by the prevention of syphilis among adults. This means early diagnosis and vigorous treatment extended for a sufficient length of time to insure against relapse.

Notes and References.

1. During the past seven years stillbirths were reported in North Carolina as follows: 3,572 in 1914; 3,471 in 1915; 3,873 in 1916; 3,706 in 1917; 3,696 in 1918; 3,271 in 1919, and 4,171 in 1920. Total for the seven years 25,760.

2. These percentages are based on the deaths under one year in the registration area for 1919.

3. Jeans—Syphilis and Infant Mortality—American Journal of Syphilis, January, 1919.

4. Most of these data and references are given in a memorandum on "Venereal Diseases from the Angle of Child Hygiene," prepared in the office of the Public Health Service at Washington.

5. Spaulding—The Problem of Venereal Disease in Its Relation to Penal Institutions—Medical Record, April 27, 1918.

6. Stokes—Today's World Problem in Disease Prevention—U. S. Public Health Service.

7. Routh—Ante-natal Syphilis — American Journal of Syphilis, July, 1919.

8. Wile—Health Classes for Children—New York Medical Journal, October 25, 1919.

9. DeBuys & Loeber—Congenital Syphilis in an Institution—Jour. A. M. A., October 4, 1919.

10. Spohr—Results of Routine Wassermann Tests—Ohio State Medical Journal, January, 1920.

11. Findlay—Syphilis in Childhood—London, Hodder & Stoughton.

12. Williams—Syphilis in Prenatal Care—Bulletin, Johns Hopkins Hospital, May, 1920.

13. Bertin & Gayet—Quoted in Editorial—Medical Record, December 13, 1919.

14. Jeans—A Review of the Literature of Syphilis in Infancy and Childhood—American Journal of Diseases of Children, July-August, 1920.

15. Osler—Quoted by Cannon in The Family of the Syphilitic—Modern Hospital, February, 1918.

16. Osler—Oration Before the Medical Society of London on the campaign against syphilis—Lancet, May 26, 1917.

17. Royster—A Statistical Report on the Incidence of Congenital Syphilis—American Journal of Syphilis, January, 1921.

18. Williams—Quoted in a circular letter to the physicians of New York State sent out July 19, 1920, by Dr. Herman M. Biggs, State Commissioner of Health.

INFANT MORTALITY*

Dr. A. McR. Crouch, Wilmington, N. C.

In looking over the transactions of the Medical Society for the past five years, I found no record of any paper on infant mortality before the society. Evidently this question has not been of much interest to the medical men. I believe that here is the place where infant mortality should be discussed because it is only through the medical profession that the rate can be materially reduced. Public health workers deal with this question collectively. They provide sanitary conditions, good water and pure food for the people as a whole. These measures have their effect in the reduction of infant deaths, but they can only scratch the surface of the vast field to be worked. The physician deals with this question individually, and we will see later that the greatest causes of infant mortality require medical diagnosis and therapeutic skill to bring about any marked reduction in its rate. Infant mortality shows the effect of the individual doctor upon the individual client, and it is a good index to the trouble that pediatricians have and it gives an idea of the enormous amount of morbid material which passes through our hands on to the general practitioner. For every infant that dies, there must be two or three irreparably damaged for which somebody must care. Every physician knows how difficult to prevent or treat diseases in a defective person.

To support the above statement I will present statistics compiled by the State Bureau of Vital Statistics covering a period of four years, 1914 to 1917 inclusive:

Year	Total Deaths	Deaths of Infants Under One Year of Age
1914	29,044	6,497
1915	31,324	6,808
1916	31,372	7,148
1917	33,985	7,596
Average per year	31,682	7,012

Over 22 per cent or approximately one-fourth of all deaths occur in infants during the first year of life. For every 11 babies born one dies. It is important to note the comparatively few conditions which cause a very great number of infant deaths. Diarrhoea and enteritis, congenital malformations and congenital defects, and causes not given or ill-defined, are responsible for 4,563 or two-thirds of all deaths under one year of age. Of the 4,563 deaths, 1,084 or one-third are caused by diarrhoea and enteritis, 3,497 or two-thirds are due to congenital defects and debility and causes not given or ill-defined, which class no doubt includes a majority of cases rightly belonging to congenital debility. Therefore, in dealing with the great cause of infant mortality one-third of our attention, so to speak, is directed to the care of the living baby and two-thirds of our attention is directed to the babe yet unborn. It seems that the waters are mudded at the source. It is remindful of the scriptural teachings "That the iniquities of the fathers shall be visited unto the third and fourth generations." It appears that the high infant mortality rate is due more to inheritance and improper prenatal conditions than to poor sanitation and hygiene. Therefore, the question resolves itself into the fact that infant mortality can be reduced to its lowest level when the medical profession reaches its highest degree of efficiency. Two things must be done. The public health workers must sanitate the environments, provide good water and pure food, and the medical profession must remedy the defects in the parentage and give proper care to their offspring.

There are three ideas or the same idea originating from three different sources, which when it reaches its full development will be effective in reducing infant mortality. These ideas are: Life extension work, introduced by commercial men, such as life insurance companies; community health centers introduced by public health workers; and group practice introduced by the medical profession. Life extension work attempts to keep people well by finding defects early and getting them corrected. Good business men know that it pays—nearly every insurance company

*Read before the North Carolina Medical Society at the Pinehurst meeting, April 25-28, 1921.

has medical men going around, examining policy holders in attempt to keep them well. Public health workers realize that the death rates cannot be reduced to the lowest level unless their work is correlated with the work of medical practitioners, hence the health center. Physicians know that unless a man confines himself to a certain branch of medicine, and correlates his work with specialists in other lines, he cannot reach the highest degree of efficiency in his practice, hence the group practice.

The object underlying the development of these ideas is the production of efficiency in preventing disease, healing the sick and reducing morbidity and mortality. We have seen that tuberculosis, typhoid fever and venereal diseases contracted by the babe are not mentioned as the direct cause of any great number of infant deaths, but if the indirect effect of these diseases could be analyzed, the result would be appalling. The above diseases cause over 5,000 or more than one-sixth of all the deaths in the State. They occur principally in people of the child bearing age, and thousands of young mothers are taken away from their nursing babes and thousands of others who do not die are left unable to nurse the young. Thousands of fathers of infants die of these diseases, leaving anxiety and increased hardships on widowed mothers which prevents the proper nursing and care of the baby, forcing it to leave the breast and go to the bottle. It has been proven that the death rate among artificially fed babes is three to five times as great as in the breast fed. If tuberculosis, syphilis and many other conditions are recognized early and treated energetically, many hundreds of deaths can be prevented.

Aside from the indirect effect just mentioned of tuberculosis, syphilis and other preventable and curable diseases upon our infant death rate, there are hundreds and thousands of deaths produced by the effect of the diseases upon the mother during her pregnancy, resulting in congenital debility and death of the infant. This takes us back to the babe yet unborn and we have already seen that to here is where two-thirds of our attention must be directed. The remedy consists in carrying the mother to term in the best possible condition, and how to do that you are more familiar than I.

There are many other conditions such as the economical, climatic and environmental which affect infant mortality, but these I will not attempt to discuss. There is one more thing of great importance which should be mentioned and that is the teaching of mothers how to care for their babies. This can be done more effectually and quicker through the personal contact of the doctor and mother than in any other way. Educating the mother in caring for herself and baby has brought about a remarkably low infant death rate in New Zealand.

Something more must be done to reduce our infant mortality.

The rate of the four year period is as follows:

Year	Infant Mortality Rate Per 1,000 Births
1914	90.3
1915	85.6
1916	93.3
1917	99.3

Every physician will admit that infant mortality can be reduced. It is being reduced in the registration area of the United States and in other countries. New Zealand has the enviable death rate of 48.2 per thousand births.

Gentlemen:

The time is at hand when we must consider this question more seriously and put forth our best efforts in reducing infant mortality. The laymen are beginning to learn more about these things and demanding more consideration at our hands. Infant mortality is going to be reduced. If the doctors do not take advantage of the situation and handle it, organized society will. There is already a move on foot known as health insurance, the principle of which is the protection of health and care of the sick through medical practice controlled by the State. It has been introduced into Germany, hotly discussed in England and spoken of in the United States. We can make health insurance unnecessary and unless we do it State control is inevitable.

POSTERIOR DISLOCATION OF THE ASTRAGULUS IN LONGITUDINAL FRACTURES OF THE LOWER END OF THE TIBIA.

Jas. W. Gibbon, M.D.
Charlotte, N. C.

Dislocations of the astragulus and displacements of the tarsus in fractures about the ankle joint are relatively uncommon, but owing to the frequency and variety of fractures in this region, are worthy of a good deal of consideration in regard to proper interpretation, reduction and restoration of the normal joint function as far as possible. In this paper, I desire to speak of a type of fracture at the ankle joint, which seems to be commonly associated with posterior dislocation of the astragulus and a backward displacement of the tarsus.

In the September issue of the Annals of Surgery, 1918, Dr. Charles Dowd, of New York City, reported two cases of Pott's Fracture in which there was in each case a posterior displacement of the astragulus, and further showed all of the X-ray plates before and after any form of treatment.

The first case was a man of 40 years, who sustained a Potts fracture. The deformity, under anesthesia, was easily reduced four hours after the injury, and a cast applied. The next day X-ray examination showed the reposition had not been maintained, but the astragulus and tarsus were displaced backwards, and there was a longitudinal split in the lower end of the tibia with wide separation of the fragments. Again anesthesia was administered, and the deformity reduced, only to discover on X-ray examination that the position was worse than ever. It was then manifestly evident to Dr. Dowd that it was necessary to remove the displacing factor, and this was the pull of the calf muscles.

Fig. 1—*Picture taken immediately after injury showing posterior displacement of astragalus and longitudinal fracture of lower Tibia.*

Fig. 2—*Plate made after first reduction, showing good position.*

Accordingly the patient was anesthetized, and the tendo-achilles lengthened after the method of Hibbs, and a plaster of Paris cast then applied. Subsequent X-ray examinations showed the position was maintained and late results of the case proved practically a complete restoration of function.

In the second case, as soon as the X-ray diagnosis had been made of a longitudinal splitting of the lower end of the Tibia with a posterior dislocation of the astragulus, and after the experience of the first case, the tendo-achilles was at once lengthened at the first operation. The immediate and late results in this case were also reported as being good.

During my service in the Pennsylvania Hospital, I saw one similar case. A

young Jewess had received a fracture of the lower end of the tibia with a marked posterior displacement of the astragulus. Twice attempts were made to reduce the deformity and maintain it. Without anesthesia reduction was impossible because of the rigidly contracted muscles of the calf. Under anesthesia the foot could be brought into place but as soon as the patient reacted, the contraction of the muscles was resumed and the deformity largely reproduced. In this case a tenotomy of the tendo-achilles was resorted to, and the reduction became permanent.

Fig. 3—Shows recurrence of the same deformity after reduction as seen in plate 2 and even worse than at first.

The fourth case is a man of 50 years, seen here. Near the first of October he was thrown from a small gasoline car and received an injury to his left ankle joint. We saw him two weeks after his injury and he then had on a cast. He had been treated by a doctor in another city, and had brought X-ray plates with him. The first plate taken immediately after the injury had shown a longitudinal splitting of the lower posterior end of the tibia extending into the articular surface, with a marked posterior displacement of the astragulus, and the foot drawn upward and backwards. The second plates showed that the deformity had been reduced, when the cast was applied. On re-xray examination by Dr. Lafferty, we found that the deformity had completely recurred, and was just as bad as at the initial injury. If we had not had pictures proving that reduction had been accomplished previously there might have been some reason for doubting under the circumstances. Therefore from all indications, the fracture seemed to belong to the group cited above, and to lend itself most favorably to tendon lengthening plus the reduction. On October 17, the patient was anesthetized, the tendo-achilles lengthened, reduction easily accomplished, and a plaster of Paris cast applied. Frequent X-ray examinations since have proven the permanency of the corrected position. At present the man is walking about with only a cane and has a goodly return of function, though four to six months is the time required for the maximum return of function.

Fig. 4—Shows reduction and maintainance of reduction after the Tendo-Achilles was lengthened.

In these four cases, the chief bony injury was a longitudinal splitting of the posterior surface of the tibia, penetrating the articular surface, and permitting a posterior dislocation of the astragulus, and upward and backward displacement of the tarsus, the latter of which is accentuated and held so by the contraction of the calf muscles. In three of the cases reduction could only be assured after a lengthening of the tendon of these muscles, in the second

a recurrence of the deformity was anticipated and the tendon lengthened at the first anesthesia.

An explanation of the difficulty in maintaining the corrected position in this type of fracture is by the fact that the articular surface of the tibia is so shattered that it presents no obstacle to the upward and backward displacement of the tarsus under the pull of the calf muscles. To obtain then permanent reduction of this deformity, all strain against the posterior articular facet of the tibia must be removed, and this is best done by relieving the action of the calf muscles by lengthening or tenotomy of the tendon.

Hibbs, who has had perhaps the largest experience in lengthening the tendo-achilles for muscle bound feet, assures us of a complete return to normal muscle function in adults from four to six months with absolutely no loss of the strength of the tendon.

Sir Robert Jones advises the lengthening of this tendon where the tarsus is displaced forward, and in the equinus deformity which sometimes follows a badly healed Pott's fracture.

Guichard favorably records the treatment of four cases of Pott's fracture by the aid of tenotomy.

Tenotomy is not advocated where good position can be gotten without.

STREPTOCOCCUS VIRIDANS ENDOCARDITIS.

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N. C.

Endocarditis due to infection of the endocardium with streptococcus viridans is not rare, but it is rarely diagnosed with promptitude and exactness. There are several reasons for this. The clinical picture, though highly characteristic when it is known, is not one familiar to all. The manifestations of the malady, moreover, resemble other well known common diseases nearly enough to make the differential diagnosis very confusing. Finally, the absolute proof of the presence of streptococcus viridans endocarditis can only be obtained through blood-cultures, and this is a technical procedure not always immediately available. Within the last eighteen months I have seen six instances of streptococcus viridans endocarditis, all with positive blood-cultures, and in this brief paper I wish to draw to your attention the results of the study of these cases. The series of cases is not large but amply large enongh to illustrate perfectly the differential diagnosis of this insidious malady. The problem presented is not statistical but diagnostic.

Before proceeding to the clinical considerations it is necessary to define accurately the causative agent of the disease—streptococcus viridans. Schottmueller's (1) classification of streptococci, based on the appearance of the colonies on blood-agar, is at once the simplest and most practical classification of these bacteria. He divides them as follows:

(1) Streptococcus haemolyticus (S. Longus, S. pyogenes), which on blood-agar produces a clear zone about the colony. This is the deadly organism most constantly found in erysipelas, puerperal fever, scarlet fever complications, etc.

(2) Streptococcus Viridans (S. mitior), which on blood agar develops as a small grayish colony surrounded by a zone of green pigment, from which it derives its name.

(3) Streptococcus mucosus, which grows as transparent, glistening drops of mucoid consistency. My own studies (2) of this organism made at the Rockefeller Hospital in 1913, have shown that it is in reality a member of the pneumoncoccus group, and it is now commonly referred to as pneumococcus mucosus, constituting Group III of the Rockefeller Hospital classification of pneumococci. I demonstrated that the pneumococcus mucosus is bile-soluble, resembling in this other pneumococci and differing from streptococci, and that, with complement-fixation tests, it falls into the family group of the pneumococci and not the streptococci.

There is, however, a true streptococcus mucosus, which can be differentiated from the Group III pneumococcus by appropriate means.

Streptococcus viridans, in contrast to the other streptococci, is not a very virulent organism, producing, as a rule, mild catarrhal inflammation of mucous membranes. Endocarditis due to this organism is an exception, however, for, though characterized by great chronicity, it still leads almost invariably to a fatal termination. Cecil (3) has stud-

ied the relation of streptococcus viridans to infections of the upper respiratory tract, including teeth, tonsils and mucous membrane. He found streptococcus viridans present in 85 per cent of cultures made from various parts of the mouth, teeth, alveolar socket, tonsils and mucous membranes. These studies are important, indicating the probable portals of entry for metastatic infections, like endocarditis.

The terminology of the disease under discussion is confusing. It has been called "chronic infective endocarditis" (Osler), "pernicious endocarditis" (Gardinier), "subacute bacterial endocarditis" (Libman), "subacute infective endocarditis," "endocarditis lenta" (Barker). It seems absurd to add another to this list of names, but since the infecting agent which causes this very characteristic form of subacute endocarditis is invariably streptococcus viridans, it is rational and helpful to call the disease streptococcus viridans endocarditis.

The portal of entry of the streptococcus viridans is in all probability an infected gum, abscessed tooth or diseased tonsil. A heart-valve which has been injured by a former endocarditis offers a favorable site for bacterial implantation, and as a rule, it is such valves which develop streptococcus viridans endocarditis. Rigid, warty masses develop on the heart valves, and there is a septicemia, easily demonstrable by blood-culture. A glomerulo-nephritis is almost always found at autopsy. Portions of the warty vegetations may be swept into the blood-stream causing infarctions of various organs, such as brain, kidney and spleen.

No purpose will be served by the tedious detailing to you of case reports. I shall try, therefore, to present a clear-cut clinical picture of the malady from my own experience, and the reports of others, and discuss the differential diagnosis in detail.

The disease usually begins insidiously. The patient develops fever of an intermittent or remittent type, not infrequently accompanied by afternoon chills with sweating. There is no marked prostration, and the patient insists on being up and around. Examination of the heart reveals, as a rule, a loud mitral systolic murmur, due to a former endocarditis. The disease progresses very slowly. The fever, seldom very high, may become almost, or quite normal for a while, only to recur again later. The leucocytes do not behave according to a constant rule. In my own experience they have never been found higher than 11,000 and have ranged from eight to eleven, but other writers have found them higher. I believe, however, one can safely say that the disease is seldom accompanied by leucocytosis—that is, the normal limit of 10,000 is seldom passed. Carefully performed leucocyte counts are of great aid in differential diagnosis.

Blood-cultures should be done at once. The manner of performing the blood-culture is very important. The blood should be placed in agar and plates made. Two or more plates should be poured at each culture. Bouillon should not be used. Streptococcus viridans grows slowly and forty-eight hours may be required to obtain the characteristic green colonies. A colony smeared on a slide will reveal the characteristic long-chain streptococcus formations. The diagnosis is thus made with an exactness possible in few other diseases. Negative cultures should be confirmed, for their value is very great in dealing with so fatal a possibility.

The duration of the disease is from four to eighteen months. Gradually the patient becomes sallow, anemic and may develop petechial hemorrhages. Not rarely tender nodules develop in the skin of the hands and feet, due to infected emboli, and the same cause may produce great pain in various muscles, especially the lumbar muscles. The urine contains albumin, casts and frequently blood, due to the embolic glomerulo-nephritis which is seldom absent from the picture. Paralysis, due to cerebral emboli, may develop at any time. During all this time the patient may have a fair appetite and remain well nourished. When the physician tells the family that the patient has a fatal form of valvular heart disease, he meets with disbelief, and another, and more optimistic doctor is speedily given charge of the case. Sad to say, comfort can usually be secured by the family in this way, and the new physician proceeds gaily to give quinine, calomel and many other things, never forgetting "sodium cacodylate," until the downward progress of the patient again causes alarm. The second physician is

dismissed and a third called. Finally the great settler of all disputes, Death, comes in, and even the dullest has to admit that the disease was a fatal one. In my experience Death is the only thing that really convinces the family of a fatal outcome, so insidious and chronic is this strange disease.

In the differential diagnosis typhoid, malaria, tuberculosis and other forms of endocarditis must be considered. A very carefully taken history with a thorough physical examination should arouse the suspicion of endocarditis, and if the physician is familiar with the clinical picture of streptococcus viridans endocarditis, a tentative diagnosis can be made at once. However, a positive blood-culture alone furnishes indisputable evidence of this disease, and should be done in every suspected case. In such a disease, where therapy is without avail, the least a physician can do is to make an accurate diagnosis. The prognosis is very gloomy. Libman (4), of New York, who has had a very wide experience with this disease, states that recovery may rarely take place. I think this must be very rare indeed, for the experience of the whole world is that the disease is among the most fatal of known maladies. I have never seen a case recover.

The diagnosis of malaria in this disease has, perhaps, a reasonable basis. The afternoon rise of temperature, with chills and sweating, though by no means justifying the diagnosis of malaria, yet simulates slightly the picture of malarial infection. The examination of fresh and stained blood will definitely settle the question of malaria.

In the late stages of viridans endocarditis there is a slight resemblance to typhoid fever. A leucocyte count and a widal together with a careful anamnesis and physical examination will clear up this differential possibility.

Pulmonary tuberculosis should present little diagnostic difficulty. Only an advanced tuberculous lesion would simulate the picture of viridans endocarditis, and a careful examination would reveal the physical evidences of a diseased lung.

Every form of therapy has been tried in this disease, but all to no avail. Until an effective therapy is developed treatment must be purely symptomatic. Blood transfusions, vaccine and serum therapy have all proved valueless. Even "sodium cacodylate" disappoints its warmest admirers.

To recapitulate: Streptococcus viridans endocarditis is not a rare disease, and should always be thought of as a differential possibility in any continued fever of unproved causation. This possibility becomes more probable if examination reveals a valvular murmur. Blood cultures should be made early and repeated if necessary.

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PREVENTIVE PEDIATRICS AND THE NUTRITION CLASS—A PLEA FOR NUTRITION CLASS METHODS IN PRIVATE PRACTICE.*

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In a recent discussion on postgraduate education in Pediatrics, the statement was made by a pediatrist, and subsequently printed in one of our foremost medical journals, that "Pediatrics is internal medicine with an age limit." It is just this misconception of what Pedriatics really is, and of what it should be, that has hindered the development of this branch of medicine, and allowed many excellent internists to deny its right to exist as a separate department. For if Pediatrics is internal medicine with an age limit, then it has no more right to a separate existence than has its young-old brother, Geriatrics, the study of old age; or a specialty of adolescence, or of middle age, or of any other period that we might choose to fence off arbitrarily from the remainder of the span of life. Its only excuse for existence lies in the fact that, in order to treat children successfully, or even passably well, one must come to realize that he is dealing with individuals that think, act, feel, and develop

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in ways as different from those of the adult as if they belonged to a distinct species.

To be sure, the claim is readily granted that in order successfully to treat children, one must first have had the very best possible grounding in general medicine, followed by a certain period of the seasoning or "mellowing" to be attained only by the experience of general practice, in order to learn the delicate art of dealing with the parents of his little patients in such a way as to attain the maximum of co-operation necessary to carry through the measures that he wants to employ. But many a man has all of this, and yet is a lamentable failure in his dealings with children, for the simple reason that he has failed to realize the necessity of erecting upon this general foundation a superstructure of special preparation entirely distinct from that required for successful work with adults.

I think that I am quite safe in citing four separate departments in pediatrics, in each one of which a separate training, a separate approach, and a separate technique, is essential—for in none of them have we anything in adult practice sufficiently cognate to serve us even as a crude guide. The first of these is the matter of successfully maintaining breast-feeding—in itself a distinct art, I think you will agree. The second is that land of shadows, that dark and bloody ground, infant feeding. The third is an understanding of the essentials of infant, child, and adolescent psychology, without some inkling of which I venture to say that no man should dare to advise a parent in the multiplicity of problems which are presented to them. The fourth is that combination of preventive medicine, one-man-diagnostic clinic, drugless healing, and "general-medicine-in-children" that has come to be included in the term, "Nutrition Class." I had the pleasure of discussing the first two of these departments before this section a year ago. It is with the application of the last to the practice of all of us that I have to deal today.

If the nutrition class, its principles and practice, were confined, as we generally assume that they are, to the children's clinic of the large city hospital, I should not be discussing it at this time, as its interest for us would be largely academic. But it is the fact that its principles and practice correspond so closely with the needs of the man in general practice, one-third of whose patients are children, and so would benefit by his understanding and use of these principles, that make the consideration of the subject worth while at this time.

The principles involved, roughly speaking, are these:

1. Somewhere between 1/3 and 3/5 of all children in the United States, regardless of social or financial status, are markedly below the normal standard to which they may fairly be expected to attain. This standard is shown in detail by the little table of expected weights for ages and heights, prepared by the child health organization.

2. The cause of this subnormality, in each individual case, comes directly under one of two heads—either (a) a remediable physical defect, like bad teeth, diseased tonsils and adenoids, orthopedic defect, bad eye-sight or ear condition, etc.; or (b) a faulty health habit, such as insufficient sleep, improper food or food at improper times, overindulgence in sweets, overstrain at school, too much "movies," etc.

3. Naturally, the cure of this condition of retardation lies, not in the prescribing of tonics, iron, cod liver oil, change of climate, but in the removal of the physical defect or the correction of the faulty health habit.

4. In children of four or five, or over, this cure can be obtained far more easily and far oftener, by appealing in some way directly to the child, and securing his co-operation through his interest, than by giving orders to the parents that frequently fail of execution; because, in the last analysis, the child is the ruler in so many homes today.

These four points sum up, in a nutshell, the rationale of the nutrition class—the details of which you are all familiar with, from reading accounts in the very recent pediatric and general literature. Has it any message for those of us who are constantly seeing ailing children? To me the answer is transparently obvious. And the lessons to be learned may be summed up under four heads, corresponding to the four principles enunciated above:

1. The family doctor is not fulfilling his duty to his families unless, and until, he lets it be known that he is ready

and willing, nay anxious, to make a complete physical and mental examination of every child in those families, while that child is in health, and while there is no emergency to distract attention from the general stock-taking, and to furnish the parents of the child with such an inventory of his health

edge of the existence of three preventive procedures which have a wonderful potentiality as life-savers of childhood; but that such potentiality can be changed in actual life-saving only as someone brings to the knowledge of parents the fact that their own children are entitled to the benefits of the protection

Report of_____ Date_____

Age _____ Recommendations_____

	Average at this age
Weight_____lbs._____oz.	_____lbs.
Height_____ft._____in.	_____ft.
Chest Circum._____in.	_____in.
Gen. Nutrition	
Skin	
Development	
Mentality	
Vision 20/____ L 20/____ R	
Hearing	
Speech	
Teeth	
Tonsils	
Adenoid Tissue	
Glands	
Heart	
Lungs	
Abdomen	
Genitals	
Spine	
Limbs	

DR. FRANK HOWARD RICHARDSON

FIG. A.

status. Fig. A. We need not delay this discussion in order to answer the silly hypothetical objection that our patients may think that we are "drumming up trade," or trying to make work for ourselves. If our patients can think so lightly of us as this would imply, it is a sad commentary upon our ministry to our communities.

A corollary to such service, of course, exists in the fact that every medical man has in his possession the knowl-

afforded to them by these simple, easily accomplished measures. Of course I refer to smallpox vaccination, active immunization against diphtheria by toxin-anti-toxin after testing for susceptibility by the Schick reaction, and anti-typhoid inoculation. To practitioners who have had the experience you have enjoyed of learning the eagerness of parents to secure for their children such benefits as you gave so freely in the anti-typhoid drive that you carried

VACCINATION CERTIFICATE

Has been protected against the following diseases:

Smallpox:
By Vaccination ---------- 192--- ----------M. D.
Pronounced Successful ---------- 192--- ----------M. D.
By Previous Attack of Smallpox-- 19---- ----------M. D.

Diphtheria:
By Mixed Toxin-Antitoxin Treatment:
Found Immune by Negative Schick Test ---------- 192--- ----------M. D.
Found Susceptible by Positive Schick Test ---------- 192--- ----------M. D.
1st Inoculation ---------- 192--- ----------M. D.
2nd Inoculation ---------- 192--- ----------M. D.
3rd Inoculation ---------- 192--- ----------M. D.
(Previous Attack of Diphtheria, or Antitoxin Injection, does not protect)

Typhoid Fever:
By Inoculation:
1st Inoculation ---------- 192--- ----------M. D.
2nd Inoculation ---------- 192--- ----------M. D.
3rd Inoculation ---------- 192--- ----------M. D.
By Previous Attack of Typhoid Fever ---------- 19---- ----------M. D.

FIG. B.

Only three of the common diseases can as yet be positively prevented by vaccination or inoculation. They are: Smallpox, Diphtheria, and Typhoid Fever.

Smallpox: By vaccination with vaccine on arm or leg. Protection lasts for a number of years. Child should be revaccinated after 14 years of age; and on known exposure to case of Smallpox.

Diphtheria: By three hypodermic inoculations, at weekly intervals, with a mixture of diphtheria toxin and its anti-toxin. (This is necessary only in case the preliminary "Shick Test" has been positive, thus showing that the individual is susceptible to Diphtheria,—that is, would contract it if exposed.) Protection probably lasts during the whole lifetime.

(The protection afforded by large injections of antitoxin, given after exposure to diphtheria, lasts only a few weeks.)

Typhoid Fever: By three hypodermic inoculations, at weekly intervals, with a measured number of killed typhoid bacilli. Protection lasts for about three years.

All protection is probably relative, not absolute. Therefore, avoid exposure to any disease, even though rendered comparatively safe from it by the above procedures.

FIG. C.

Reverse Side of Fig. B.

through in this State a few years ago, no extended argument is necessary. I may say, however, that parents are if anything more ready to secure their children against the terrors of diphtheria, than they are to protect them against typhoid. In neither of these instances do we run across the blind, unreasoning prejudice that is sometimes encountered when we mention smallpox vaccination; but in a State where smallpox is no longer quarantineable, the duty of educating the community in the necessity for protection becomes of paramount importance, if we are to do our whole duty to our pa-

tients. The accompanying little summary of the different benefits held out by these three separate procedures, printed on the back of a "Vaccination Certificate," has proved most helpful in my hands in bringing this matter to the attention of parents, who usually have but to get a clear picture of the matter, in order to gladly avail themselves of the protection offered their children.

3. The castor oil bottle, the calomel tablet box, the quinine capsule, and the nauseous dose of so-called iron "tonic," as panaceas for all the ailments of childhood, must go the way of Peruna, and other equally nefarious lazy-man's medication, in the light of our present understanding of our problem. The way to improve the individual child is to remove his defect—and this may call for the highest "selling ability" on the part of the doctor—much more of a task than the mere prescribing of a favorite R/, but giving results that the latter never could hope to accomplish.

4. The doctor who deals with children—and show me the man who does not!—must no longer consider it beneath his dignity to adapt his office equipment and his manner of address and his mode of treatment to fit into the personal equation of this large segment of his clientele. The dry goods merchant doing business with a buying public consisting largely of women, does not consider it either bad form or poor sense to equip his shop with the things that women like and find acceptable—in other words, to make his "clients" feel comfortable and at ease during the time that he has to deal with them. Why should it be beneath the dignity of the doctor to make his office a place to which children shall want to come, rather than a chamber of horrors from which he will shrink with dread? If this seems fanciful, ask some man who has seriously undertaken the problem of equipping his office for work with children, and making it attractive to them, and see whether he would be willing to go back to the old way in dealing with these little patients. I can assure you that he will tell you that nothing that tends to secure the cordial co-operation and confidence of the child is thought or effort wasted; for without this cordial co-operation, the task of the doctor who would deal with children is a dark and dreary one, from which he will shrink almost as much as do the children with whom he has to deal.

These are some of the lessons, as I view them, that the Nutrition Class has brought to everyone of us. Everyone of us must learn them, as well as the corallaries that abound so richly in a study of this new development in the field of health and the practice of medicine, if he is to do any respectable fraction of his duty to that large portion of his clientele—the children.

2. Any man who deals with children (and who among us does not?) must, in order to be even commercially honest, and give value received, be prepared to completely examine a child. And this must consist, not in a perfunctory glance at the throat and a hasty listening at the chest, but of a seriously undertaken attempt to determine the following points: (a) weight, in relation to age and height, to be ascertained by scales and weight table; (b) eye-sight, by means of simple test card, such as the "Optotype" of Evans, designed for the use of children too young to read the letters on the Snellen; (c) hearing, approximately, by voice or watch; (d) general physical condition, by ordinary methods of physical examination; (e) orthopedic condition, especially as regards the existence of spinal divergence, posture, leg-defect, and flat-foot; and (f) rough approximation of mental age, by means of a hasty attempt at a Binet-Simon test (either Goddard or Terman revision).

(If any one considers himself unprepared along any of these lines, let me supplement the advertising pages of the various Southern journals, and call to his attention the fact that there is a Southern Pediatric Seminar to be conducted in the mountains of this State this summer, which aims to touch on all of these points.)

It took Ehrlich 606 experiments to discover a way to give a man arsenic enough to kill syphilis germs in his blood without running the risk of killing him. He called the result 6-0-6 or "salvarsan." In this country the United States government supervises its production through the Hygienic Laboratory of the Public Health Service and calls it arsphenamine.

THE NURSE'S RELATION TO INFANT WELFARE*

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(1) "The nurse's relation to infant welfare" is that of a means unto an end —the ultimate end being marked reduction of maternal and infant mortality, and the nurse an essential factor in effecting it.

The fact that over one-half the infants' deaths are chargeable to causes antedating birth (therefore not touched by current methods in health work of educating the mothers and only partially reached by prenatal work) is **the problem** that challenges the attention of the public health profession today.

(2) **The nurse's relation thereto must be the same as her relation has always been to the most urgent need for her service, namely, a direct relation and a personal contact.** First as a woman and second as a nurse she is **the** worker (endowed by nature and prepared by training) best fitted to establish direct relationships with the home and personal contact with the mother; so public health nursing is recognized as fundamental to any child welfare program and a vital educative function.

As child welfare in the last analysis is largely dependent upon certain social, environmental and economic factors, the question arises, What does the American child need for growth and development consistent with his dignity as a future American citizen? The answer is embodied in **minimum standards of child welfare** (representing the most expert opinion on the needs and rights of childhood) which offers an ideal that is considerably in advance of present day provision for child welfare. Among other things they recognize that the protection of the child must begin with the protection of the mother, and demand that care during pregnancy and confinement and instruction in the hygiene of maternity, infancy and childhood be made available for all mothers through such agencies as prenatal clinics, maternity hospitals, maternity care in the home, children's health centers and provision for a system of public health nursing adequate to reach every mother and child. (They emphasize especially the need for a family income adequate to enable mothers of young children to stay in the home instead of going out to work, with the consequent neglect of home and family). This the ideal that as public health workers should be ever before us.

What the relation of the nurse to infant welfare in this state should at present be can best be determined from the story told by statistics:

The 1917 birth rate of 74,795 was offset by 11,749 deaths under five years (one out of every six); 7,825 under 2 years, due to three principal causes:

(a) Stillbirths (3,152).

(b) Diarrhea (2,626 babies' deaths); 1,456 under 1 year; 1,170 in second year.

(c) Congenital debility, lack of care, etc. (most of which occurred during first month of life), 2,046.

Four thousand six hundred and seventy-two deaths under 2 years from diseases largely preventable by proper education of the mother in care and feeding; 3,153 stillborn babies, many of whom might have been saved by a reasonable knowledge of pre-natal hygiene. These figures together with 4,000 known midwives (and possibly one-half that many more) indicate our state's particular problem. The all too frequent (a) adverse environmental conditions of the rural community, together with (b) lack of appreciation of the economic value of human life and (c) the deplorable fact that the need of a veterinarian is more often realized and heeded than the need of a physician, add to the complexity.

The achivement of the 269 largest cities of the United States in attaining an infant death rate of 87 per 1,000 born alive (as compared with 131 a few years ago—or even higher) denotes progress to be proud of and our consolation is in the fact that it shows American mothers can be counted on to support health officers and private health agencies in their campaign against infant mortality?

(3) The **nurse's relation to infant welfare** is that of the heretofore missing link between the health department and the home. While the public health

*Read at North Carolina State Health Officers' meeting, Pinehurst, N. C., April 25, 1921.

nurses may be guilty of having diminished to some extent the rank of private duty workers, thus placing to a large degree upon the public the responsibility of nursing their own sick—their entrance into the **rural field** as pioneer workers primarily to lessen the uncertain chance of motherhood and babyhood and to thus serve the most sublime profession (that of motherhood), more than compensates for their action. They are mindful of their obligation to train the public to meet the responsibility placed upon them and —taking advantage of the opportunity that is theirs for reaching people in greater numbers (the sick and the well, county as well as town)—the public has gained by the knowledge they impart.

(4) **The nurse's relation then to infant welfare is that combination relationship of social worker, nurse, teacher and guardian:** social worker in adjusting environmental and economic conditions, guardian of the infant, and teacher of all classes of mothers—the expectant mother, the nursing mother, the unmarried mother, the grandmother and the mother-in-law (with the mammy and the granny-woman thrown in).

(5) As 600 women die in childbirth in North Carolina every year, in the nurse's relation to the expectant mother and the young mother of children under five years lies her greatest responsibility. She owes it to the former to convey to her in understandable language: (1) the necessity for proper medical attention at confinement; (2) importance of supervision during pregnancy—including early physical examination, urinalyses and pelvimetric measurement; (3) that neglect of her welfare during pregnancy (permitting overwork and disregard of simple rules for good home care as to diet, sleep and rest, clothing, bathing, exercise and outdoor life, mental habits, etc.) affects the baby adversely; (4) what the danger signals indicating prompt medical service are; (5) the help to be obtained by registering (as a pre-natal case) with the State Board of Health; (6) the necessary preparation for confinement, including arrangements for housekeeping during her incapacity, which will remove the danger of too short a rest period after childbirth; (7) what should constitute proper care during the lying-in period; (8) what should be the daily habits of a nursing mother to insure health and a good supply of breast milk; and (9) the value of birth registration.

In justice to mother and child, the nurse—whether a public health worker or private duty nurse—owes it to the young mother to teach her:

1. The care of the newborn as well as daily routine of the normal baby during the first year.
2. Importance of breast feeding.
3. Indication for weaning.
4. Preparation of supplementary or artificial feedings, care of milk, etc., and to encourage adherence to a formula and hours of feeding prescribed for each individual baby, and to make known dangers of improper feeding.

Note—Pictures were shown here illustrating how the nurse educates the rural parents and the results obtained.)

No nurse is worthy of her calling who does not emphasize the need of screens, sufficiently large covered garbage pails, sanitary privies, and their relation to infant welfare.

Very discrediting to our State is the comparison of diarrhea and enteritis mortality under two years with that of Virginia and South Carolina. If same were reportable, it would insure attention of public health nurses more promptly, as well as better results.

Unless especially provided for as a group, the child of pre-school age should be included in the infant welfare program. Present day theories of proper nourishment; training and habits; physical care to prevent defects or remedy them; as well as necessity for protection from contagions and periodical medical examinations and vaccination against smallpox should be impressed by the nurse if the child is to reach his first day of school in condition to benefit from the opportunity that is his.

"I have been appalled at the task of reducing infant death rate in Edgecombe County since the fifty-seven varieties of midwives assembled with us" was the comment of the county public health nurse. (The nurse's relaton to this particular problem of infant welfare is covered in Miss Myer's paper to follow.)

With one other group of mothers should the nurse establish a relationship—the future mothers. To encour-

age this we are issuing certificates and pins to girls over twelve who complete a course on baby care given by a graduate nurse. (124 children in eight counties have earned certificates—20 of them colored).

It is in the capacity of health teacher that the public health nurse makes her greatest contribution to infant welfare. This fact is being recognized and one State reports seventy-four nurses under supervision of the State Health Department (56 of whom are paid by the State). This is the method of dealing with the problem destined to be the most effective in declaring "safety zones for babies."

THE MIDWIFE A FACTOR IN INFANT AND MATERNAL WELFARE*

Katharine Myers, R.N.,

Consulting Public Health Nurse, Bureau Public Health Nursing and Infant Hygiene, North Carolina State Board of Health, Raleigh, N. C.

When health workers are engaged in their "favorite indoor sport" of juggling statistics nothing receives, nor deserves, greater applause than the figures showing the remarkable decrease in such preventable diseases as typhoid fever, diphtheria, and tuberculosis. But the diseases caused by pregnancy and childbirth are largely preventable and yet in twenty years there has been no reduction in the maternal death rate and it still stands second only to that of tuberculosis among women from fifteen to forty-four. Of the sixteen largest nations United States ranks fourteenth in this respect and North Carolina contributes to this unenviable record about 575 women per year. The hospitals are filled with women suffering from injury or neglect at childbirth and uncounted numbers are dragging through years of semi-invalidism and inefficiency. These are very real facts to public health nurses who perhaps are in closer touch with conditions than any one else.

The welfare of the child is wrapped up in that of the mother. More than one-half the babies who die during the first year of life die from causes related to the condition of the mother, five times as many babies die in the first month of life as in the second and fourteen times as many as in the twelfth month, most of them babies who were born too weak or too diseased to live and some because their mothers did not know how to safeguard their breast milk nor appreciate the importance of breast feeding.

So much for the problem—now, what is needed to protect maternity and infancy? It cannot be denied that the health and very life of the mother are depedent upon the character of the obsterical service she receives. The practice of obstetrics has become a highly specialized science which is difficult to apply to the salvaging of rural mothers and babies.

The distressing lack of medical service in our ten super-rural counties, the concentration of physicians in the towns, bad roads, absence of telephone connections, poverty, ignorance, and custom all have combined to foster a service enormously powerful for good or evil. Four thousand midwives are known to the State Board of Health, approximately 34,000 deliveries were attended by them in 1920. Twenty per cent of the white and 80 per cent of the colored employ midwives.

The majority of these women are dependable, self-sacrificing, poorly paid. They refuse no call, day or night, rain or shine. Most of them are past middle age, unable to read and write, and have had no training except that gained in rare instances by nursing for and assisting local physicians. Occasionally one is found who reads a "doctor book." They are still plodding along with the knowledge handed down from generation to generation, some of it valuable but interwoven with a mass of misinformation, superstition, and unbelievable fatalism. Their deep ignorance of anything resembling modern asepsis puts into their kind and faithful hands the weapons of destruction.

In practically every European country midwives are under strict State control. They are required to undergo a course of thorough training and their practice is carefully regulated by legislation. And so, although midwives are universally employed, Sweden, for in-

*Paper read at North Carolina State Health Officers, meeting, Pinehurst, N. C., April 25, 1921.

stance, shows the loss of but one mother for every 430 babies born alive, while the United States loses one for every 150, and North Carolina one for every 127.

The State Board of Health is awake to the situation and is calling for the co-operation of health officers, physicians, nurses, registrars and all who will enlist in this crusade to remove the hazards of motherhood.

Four things are required of midwives by State law: registration, use of silver nitrate solution, reporting of cases of ophthalmia neonatorum, reporting of births. Some of the county health departments also required registration and in a few instances are undertaking instruction and supervision, which is highly desirable since for obvious reasons the county can enforce a higher standard for the practice of midwifery than a state agency can.

The county nurses are especially valuable for making the personal contact and demonstration of nursing technique so necessary to success in teaching midwives. In 25 counties of the state this instruction is going on, the nurses following a syllabus prepared and outlined by the Bureau of Public Health Nursing and Infant Hygiene.

In an effort to improve conditions in the counties as yet unreached by official health agencies the Bureau of Public Health Nursing suggested a series of conferences and offered the services of a nurse to try out the plan in co-operation with the Bureau of Epidemiology under which the midwives are registered. Letters are sent out in advance calling them to a meeting, specifying place, date and hour. After a few conferences it was evident we were on the right track, for the women were so eager to learn and so grateful for instruction that the two to four hour lesson with rest periods as needed seemed all too short.

Since November, 1920, 73 such conferences have been held in 52 counties, with a total attendance of 889 midwives, 106 of whom were white, two of them men, 97 of these were ignorant of the use of silver nitrate, and 36 had never reported a birth.

The meetings are usually held at the court house, sometimes at the depot, a school house, a church, or a doctor's office. Enrollment blanks are filled out for those present and names of others secured. In this way many have been located who were unknown to any official agency. In Mecklenburg alone nine were found who, with a record of from two to twenty-five years' practice, had never reported a birth.

In opening the meeting it is necessary to explain its purpose as the vaguest ideas prevail regarding it, in spite of the clear statements sent out in the notification letters. We take up in detail the laws relating to the practice of midwifery in this state and reasons for same, then the mental attitude and qualifications, character, physical fitness and habits desirable in midwives. Their status and relation to physician needs defining, especially in the "black belt," and every effort is made to inculcate in them a feeling of regard and respect for his opinion and advice, and to look upon him as their friend and counsellor.

They are told of the value of prenatal instruction and asked to report expectant mothers to the Bureau of Public Health Nursing for the series of advisory letters.

Some of the ailments of pregnancy and indications of abnormal conditions are pointed out so that they may wisely advise as to reporting danger signals to a physician, testing of urine, etc. If time permits they are told what instruction they may give in regard to hygiene, diet, care of the breasts, preparation for confinement, and so on.

The midwife's own preparation for a case, her bag and supplies, her garments, cleaning of room, preparing bed, boiled water (hot and cold) and lysol solution, and scrubbing of the patient for delivery are discussed and demonstrated as simply and freely as possible. At this point in the lesson, if a physician can be secured he is asked to instruct them in the conduct of labor.

Some of the complications of labor are brought up as instances of when to call a doctor—such as ante-partum hemorrhage, too hard or too long labor, breech or cord presentation, patient weak, pale, or chilly, delay in twin births, severe headache, blindness, convulsions. Also some that may arise later as post-partum hemorrhage, stoppage of flow, chill, rise of temperature, red and swollen breasts. They are told

what to do while waiting for the doctor.

As much of nursing technique as is possible is given concerning the care of the baby. Throughout the lesson the points most emphasized are these:

1. The State laws.
2. Responsibility of the midwife.
3. Danger of vaginal examinations.
4. Necessity for absolute cleanliness.
5. Obligation to call for medical aid.
6. Prevention of eclampsia.
7. Protection of baby from infection of eyes and cord.

The great task now confronting us is to devise ways and means to supervise and train this body of women, discourage their employment where medical advice is adequate, eliminate the unfit, and bring speedy relief to our long neglected mountain mothers, countless numbers of whom are denied either medical or midwife service.

Establishing training centers as has recently been done in Charleston, and enlarging and amplifying the plan now operating are under consideration.

The greatest gift in the power of preventive medicine to bestow has too long been withheld. The obligation bears heavily upon us, no less than upon those who "go down to the sea in ships" to observe the rules of Birkenhead and carry on with high endeavor the ideal embodied in that old phrase "women and children first."

INFANTS THRIVE ON MATERNAL NURSING.

Breast fed babies have a better chance for life than artificially fed babies. This fact is brought out in a brief monograph entitled "Breast Feeding," which has just been issued by the U. S. Department of Labor through the Children's Bureau.

Studies made in many different countries have demonstrated that the death rate among artificially fed babies is at all times higher than among breast fed babies; that where for any reason breast feeding is the custom, the mortality rate is low in spite of other unfavorable factors; and that when for any cause breast feeding is increased in a community the infant mortality rate is lowered. Studies made in overcrowded and poverty stricken districts of New York, Chicago and other large cities indicate very clearly that where by race or custom it is the practice to feed infants at the breast the infant mortality rate is relatively low. It has been further shown that the good effect of breast feeding is manifested not only in infancy but in later childhood and even in adult life.

The problem of insuring breast feeding to babies involves economic, educational, and health aspects. As factors to be considered in promoting maternal nursing, the report includes high standards of medical and nursing care before and after babies are born, instruction of all mothers in the importance of breast feeding and in the means of promoting it, and the interest of the community in this phase of child welfare. The report emphasizes the importance for the nursing mother and her family of an adequate income in order that the mother may have proper nourishment and freedom from overwork and from the strain and worry that are inevitably attached to insufficient income.

SOUTHERN MEDICINE AND SURGERY

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M. L. TOWNSEND, M. D.
J. C. MONTGOMERY, M. D. } *Editors*

CHARLOTTE, N. C.

"Read not to contradict and confute, nor to believe and take for granted, nor to find talk and discourse, but to weigh and consider."—Francis Bacon.

Stunted Mental Growth.

Mental development stops in the average person before he stops growing physically.

Army intelligence tests indicate that only nine men in one hundred attain a mental development beyond that of a normal sixteen-year-old boy. Fifteen per cent stop mental growth at eleven years, twenty per cent at twelve years and ninety-one per cent at sixteen years.

These tests are made from the rank and file of picked men who would not be classified ordinarily as mental defectives but as the "Flower of American Manhood." For the most part they had doubtless been normal, average children conducting themselves in the home and in the school in a way to attract no particular attention. Their minds had simply developed so far and then stopped.

A definition of mind is impossible—it is known only through its operations.

The development of the mind comes through the medium of the special senses and mental development depends on the reception of impressions from without and their comparison with those already stored in memory.

Perception is the very foundation of thought and is the conscious recognition of the external cause of sensation.

Memory is the faculty which enables the retention and reproduction in mind of impressions received.

The personality is the composite of the individual memory, perception, mental development and capacity.

Judgment is the result of a comparison of concepts.

Volition, or will, may be defined as action prompted by desire and representing choice. The will has no prolonged power over involuntary muscles. The will does not control movements which have not been acquired by practice. Painful thoughts cannot be dismissed from the mind by an effort of the mill—they must be supplanted and crowded out by introducing others.

There is no such thing, strictly speaking, as a disease of the mind, but a so-called mental disease which simply means a disturbance of the operation of the mind, may be faulty judgment, faulty memory, faulty perception or faulty mental development.

The above quoted data shows an astounding proportion of persons with faulty mental development — mental dwarfs — mental defectives. Such "dwarfs" do not—cannot—function in life to full capacity and here we are brought face to face with a most astounding waste of human efficiency.

"My father thinks that when he paid for my care in college he did his full duty and all that he possibly could for me; whereas if he had begun my training years ago at home and started me in a way to help myself, my present trouble might have been escaped." This observation of a patient recovering from a manic depressive attack is full of food for thought and furnishes a possible keynote to the prevention of a considerable number of "arrested developments" and even of insanity itself.

Dr. C. Macfie Campbell, writing in April, 1919, issue of "The Journal of Mental Hygiene," says "the lack of guidance in childhood, adolescence and early adult life is one of the causes of the development in the adult of a great variety of nervous and mental disorders varying from frequent headaches, peculiar mannerisms, anomalies of mood, odd interests and enthusiasms to disorders of conduct sufficiently pronounced to be called insanity."

The "abandoned" child of "don't care" parents, even as the petted, pampered, idolized and spoiled child of the over indulgent, carries a heavy handicap. For when an immature, untrained child mind is left to direct its own destiny it does not and cannot develop those sturdy mental characteristics of sane thinking and reliable judgment. Mentality needs properly directed exercise for development just as truly as does a muscle.

An hour at the movies may deceive one into the belief that he has read a masterpiece and an adding machine may give the correct answer, but a developing mind needs the exercise gained by the reading and the memorizing of the multiplication table. A victrola may furnish music and sensual gratification but it necessitates no muscle training or mental exercise.

During adolescence the child should be encouraged to face the real situations of life, when confronted with them, and should be kept from turning away from them or denying their existence or feeling sufficient satisfaction in the wish fulfillments of day dreaming and phantasms.

Some minds stop growing because they have reached the capacity of their grey matter but most minds stop growing for the reason that they are not fed the proper food elements and are not properly cultivated.

A good old mountaineer stuck in the ground a fine apple tree sprout and then said, "Now, d—n you, grow."

Neither apple trees nor children amount to much when treated that way.

Caldwell-Catawba-Lincoln Medical Society.

Feeling a genuine need for a more intimate association with their fellows for professional help and co-operation of efforts, a number of the doctors in these three counties have joined hands in a non-political and independent society for the purpose of giving and getting real professional help.

The first meeting of 12 doctors was held at Hickory May 11th and the next June 14th at Lincolnton, at which time there were a number of new members.

Three papers were presented at this meeting.

1. "Report of a Case of Hernia of the Umbilical Cord," by Dr. Caroline McNairy, Lenoir.

2. Uterine Retroversion, Dr. G. E. Flowers, Hickory.

3. Case Report, Dr. W. F. Elliott, Lincolnton.

This society will meet each two months and the next meeting will be held in Lenoir, Tuesday, Aug. 9th. Drs. Menzies, Goodman, Thompson and Flowers will have subjects for discussion at this meeting.

The organization of this society shows for—

President—Dr. L. A. Crowell, Lincolnton.

Vice-President—Dr. J. H. Shuford, Hickory.

Secretary-Treasurer — Dr. W. P. Speas, Hickory.

SPECIAL TRAIN ANNOUNCED ACCOUNT MEETING SOUTHERN MEDICAL ASSOCIATION.

Arrangements have been made by the Medical Association of Georgia to conduct a special train to the fifteenth annual meeting of the Southern Medical Association, which will be held in Hot Springs, Ark., Nov. 14-17, 1921. This train, which will consist of all-steel drawing room sleeping cars, compartment cars and dining cars, will leave Atlanta, Ga., via the Seaboard Air Line Railway at 5:30 p. m., Saturday, Nov. 12th, arrive Birmingham at 10:40 p. m., leave Birmingham via Frisco Railroad at 11:00 p. m., arrive Memphis early morning of the 13th, using the Rock Island Railroad from Memphis to Hot Springs, arriving there about 1:00 p. m. of the 13th. This route has been selected as it is the shortest and best route from this territory to Hot Springs, and will afford our members the best possible service. Our special will be personally conducted by Mr. Pat Hampton, district passenger agent of the Seaboard, who served overseas with the Emory Unit (Base Hospital No. 43), and who has had extensive experience in conducting parties of this character. Mr. Hampton will remain with the party at Hot Springs to take care of the arrangements for the return trip. Application has been made for special reduced rates for the meeting, and we expect to have advice on this feature at an early date.

All physicians of the Southeastern States, who anticipate attending this meeting, are cordially invited by the Medical Association of Georgia to join them on this trip. Those from Virginia, North and South Carolina and Florida should join the party at Atlanta, at which point the Georgia delegation will concentrate, those from Alabama joining the train at Birmingham.

It is anticipated that this will be one of the largest and best meetings ever held by the Southern Medical Association, a very large attendance being expected from over the entire Southern States.

The officers of the Association cordially invite the physicians to take their wives on this trip, and it is principally to accommodate them that we have arranged for compartment cars to be attached to our special train. All those expecting to make this trip should send their applications for space right away.

For further information, including all details, write Mr. Pat B. Hampton, district passenger agent, Seaboard Air Line Railway, Atlanta, Ga., or Dr. Allen H. Bunce, Secretary, Medical Association of Georgia, Healy Bldg., Atlanta, Ga.

Gynecology and Obstetrics

Robt. E. Seibels, M. D., Department Editor

Obstetric Nursing—The routine procedures in hospitals are seldom adaptable to the possibilities of any but the most wealthy homes. One is impressed on visiting the delivery rooms of many hospitals with a growing concern that our nurses are being sent out absolutely unequipped to cope with the diminished resources of the houses to which they will be called. We recently saw a delivery room in which the nurse on duty was clad in sterile gown and gloves and busily laying out for a normal case enough sterile goods and implements to do anything short of cesarean section. When the method was questioned and objection raised that she would have to be busy with pitchers and basins and ether and the patient vomiting, when she was "outside," the reply was "We teach the best method here and hope the girls will live up to it as nearly as possible."

The hospital regards the institution as the proper place to have a baby: the day may come when, as one optimistic obstetrician put it, "a woman will no more think of having her baby at home than she would of having an appendectomy away from a hospital." Maybe so. But until that day dawns we believe that the nurses should be taught a method as nearly as possible equally applicable to a home of moderate means as to the finest hospital: it can be done, for some hospitals do it.

Mental and Nervous

Jas. K. Hall, M. D., Department Editor

The Editor was unable to attend the seventy-seventh annual meeting of the American Medico-Psychological Association held in Boston on May 31, and June 1, 2, and 3. Dr. Albert Anderson, Superintendent of the State Hospital at Raleigh, reports a large attendance and a program of unusual interest and excellence.

Dr. Paul G. Weston, a member of the medical staff of the State Hospital at Warren, Pennsylvania, read a brief paper on the use of Magnesium Sulphate as a nervous sedative in the treatment of conditions attended by considerable excitement. Dr. Weston has found that the hypodermic injection of from 1 c.c. to 2 c.c. of a 25 per cent solution of Magnesium Sulphate produces relaxation and often sound sleep, without unfavorable results or after-effects.

Dr. John B. MacDonald, of the State Hospital at Hathorne, Massachusetts, presented a paper on "Social Service—Patient Relations." Field secretaries in the service of state hospitals are of great value in discovering social factors as causative agents in many cases of mental disease. Such secretaries not only bring before the hospital physician information without which a diagnosis is not easy, but these field workers are able also to offer needed instruction to families about the after-care of mental patients who return to their homes after having been discharged from state hospitals. The attitude of relatives to those who have been mentally sick frequently determines whether such individuals may resume their former home-life or whether they must continue to be cared for by the state in a state hospital. Bringing about the recovery of a mental patient would seem to be usually a hospital problem; conserving the recovery is a family problem. Where shall members of the family receive instruction in this delicate and

responsible work? Trained field workers are needed for these purposes. A few states already provide them.

Dr. Henry I. Klopp, of the State Hospital at Allentown, Pennsylvania, told "How a State Hospital Co-operated with a University to Meet a Community Need." In this paper he emphasized the importance of the school as the place in which to study and to promote mental hygiene and he told of the opportunity offered the alert teacher to discover many cases of mental disorder in their incipiency. Teachers are handicapped, however, by ignorance of the early manifestations of mental and nervous disorders, and for that reason these abnormal children are often punished on account of their bad behavior, instead of having sympathetic understanding and proper treatment. Last year Lehigh University at Bethlehem gave summer courses in Mental Hygiene, and the Allentown State Hospital co-operated in this work. Might it not be well for teachers in the Southern States to have some instruction in abnormal psychology and some observation of mental patients in order that the teachers might be able to recognize beginning departure from the mental normal? Might not the classes in psychology at the state universities and in other schools accessible to State Hospitals be given both instruction and observation-training in the wards of State Hospitals? Such an arrangement would be mutually beneficial to the schools and to the State Hospitals.

At the symposium held on Dementia Praecox many opinions were heard about this obscure mental affection. It was clear that the cause and the nature of the disorder is poorly understood, and the prognosis is favorable or unfavorable, according to the viewpoint of the psychiatrist. The recovery rate ranged all the way from 0 to 80 per cent. But it is an undoubted fact that the best results are obtained by psychiatrists engaged in private practice who are able to give their patients the best and the most constant medical and nursing care. Lack of care in these cases is attended by rapid emotional and intellectual disintegration.

It may be of interest to readers of this column to know that the rather pedantic and high-sounding name of the organization has been changed from the American Medico-Psychological Association to the American Psychiatric Association. The American Journal of Insanity will become the official organ of the Association under the new name of the American Journal of Psychiatry. The transactions will no longer appear in book form.

On the sixteenth of last April, in broad daylight, on the streets of Thomasville, in North Carolina, Dr. J. W. Peacock shot to death the chief of police of the town. At the recent term of Davidson County court Dr. Peacock was placed on trial for his life before a jury from Rowan County. Many witnesses were examined and amongst them a few physicians who had examined the prisoner and who had heard all the evidence in the case, and these physicians offered the opinion that Dr. Peacock was a paranoiac. The jury, presumably on this account, found the prisoner not guilty of murder.

Several citizens of the state and a good many newspapers gave expression to their feeling of outrage on account of what was considered a gross miscarriage of justice. It was inferentially charged that the prisoner was liberated only because he was able to purchase in his own behalf the opinion of the physicians who declared him insane and therefore irresponsible. There was some criticism of the jury for paying any attention at all to the testimony of the so-called experts, but only praise for the trial judge who solely on account of the evidence of the physicians, sent the prisoner to the department of the penitentiary set aside for the criminal insane. The alienists believed and testified that Dr. Peacock was a paranoiac, and for that reason they thought he ought neither to be electrocuted nor liberated. What was done has the approval of the alienists who testified.

It is true that every insane person is potentially a criminal and liable at any moment to commit a crime. Insanity usually produces disorder of conduct, but the mental disorder may for some time antedate the disturbance of behavior, and the very first evidence of insanity may be an assault against established community custom—that is, a violation of law, moral or statutory. Perhaps the public does not understand this to be a fact. One distinguished citizen of the State of North Carolina

has publicly asserted that an insane individual seldom kills. Does he believe also that an insane person seldom attempts to kill himself or herself? Those burdened with the responsibility of caring for the mentally abnormal would live more tolerable lives if they also could become possessed of this comforting delusion. More than one citiben of the state has expressed the opinion that a jury of neighbors are much more apt to make a proper diagnosis of one's mental unsoundness than all the alienists in the world, and these gentlemen, I believe, are supported in this conviction by the interpretation of the state's law by her Chief Justice. At least a North Carolina attorney has told me that pronouncement of insanity is legal in North Carolina only when made by a jury of ones' neighbors. It is scarcely to be thought, however, that any one of these non-believers in alienists would entrust the diagnosis of the mentality of any member of his family to such a jury.

A member of the bar in North Carolina has stated in a newspaper communication that "alienists who are employed by the State and have charge of our institutions, and for that reason having unusual pre-eminence before the people, should not be allowed to appear against the State to protect by their expert evidence those charged with crime." It is to be assumed, therefore, that citizens in the employ of the State in any capacity whatsoever are to be debarred from offering testimony in court unless their evidence is to be used against their fellowman in an effort to deprive him of life, liberty, or property? The superintendents of the state hospitals are to become, it would seem, co-solicitors, or assistant prosecutors, in criminal cases in which mental abnormality is suspected in the prisoner?

The writer himself has always felt when called upon to examine a prisoner and to offer in court an opinion about the prisoner's mentality, that he ought to be appearing neither for the prisoner nor for the state, but solely in the interest of justice herself. This the writer has always attempted to do, but perhaps not always successfully. Rules of procedure in court are apparently such that an ordinary witness can scarcely be non-partisan. But all honest men must confess that it would be a terrible crime for the state to execute an insane person because he has committed a crime worthy of death in a sane person. It would be almost as reprehensible for the state to allow a criminal to escape punishment on the ground of non-existent insanity. Both mistakes are probably made.

It would seem that the time has come when the state should go about the organization of a medical commission whose duty it should be to examine individuals who are charged with serious crimes. This commission in the beginning of its existence might be clothed with no other authority than to advise the court of the prisoner's probable mental condition and his probable degree of mental and moral responsibility. If advised by an unbiased medical commission—a part of the state's judicial machinery—that a prisoner were insane, no prosecuting attorney would feel like making an effort to take the life of such a prisoner. Criminal procedure against such an individual would then be unjustified and unnecessary. Cannot the great forward-moving state of North Carolina take some step in this direction? No person occupies a seat in the electric chair in the state of Virginia until that person has been examined mentally and physically by physicians whose report is made to the Governor of the Commonwealth. This examining board simply offers its opinion to the Governor about the mental condition of the condemned man. Upon the Governor then rests the awful responsibility of determining what shall be done with the prisoner's life.

And if a person be insane, regardless of whether he has attempted to kill himself, or has succeeded in killing his fellowman, why should he be sent to the penitentiary? A hospital, and not a penitentiary, is the proper place in which to care for the insane. Should not the department in the penitentiary for the so-called criminal insane be a part of a state hospital?

On an Eastern hill, nearly two thousand years ago, surrounded by a multitude which represented the best element of a great city, a man was executed after having been convicted of a criminal charge. His death was prolonged and painful, but just before he expired, in response to the jibes and curses of those who were putting him

to death, he cried out, "Father, forgive them; they know not what they do!" His name was Jesus Christ. History has concluded that Pilate failed to wash clean his hands, and that the ecclesiastical multitude brought about the execution of an innocent man.

State Medicine

L. B. McBrayer, M. D., Department Editor

Relation Between the Specialist and the Practitioner.

James B. Herrick, M.D., Chicago.

American Medical Association Bulletin, Vol. 15, No. 1, Jan. 15, 1921.

Report of Committee to the 17th Annual Conference of the Council on Medical Education and Hospitals.

In this paper it will be assumed that we are dealing with real specialists, real practitioners, real patients. If the specialist is a quack, the family doctor a commercial fraud, and the patient an ignoramus, talk is of little avail. Under such circumstances there are no relations except those of dishonesty, greed and gullibility. Their very nature condemns them and makes argument unnecessary.

I wish at the outset to advance the proposition that in any discussion of the relation between specialist and general practitioner there is a third party to be considered, namely, the patient. Furthermore, his rights take precedence over those of the other two parties. In theory the correctness of this conception will be generally admitted, in practice it is often overlooked.

I take it that this committee, a committee on education, is more concerned with the question of the development and training of the specialist of the future than with questions of so-called medical ethics. I shall, therefore, omit as not germane to the subject as it may properly be brought before this body, any lengthy consideration of certain phases of medical conduct that concern specialist and practitioner, though such discussion might not improperly be indulged in under the caption assigned me. I may cite as examples the attitude of some family physicians who deny that the specialist has the right, except by the express consent of the family physician, to examine the ambulatory patient who of his own free will comes to the specialist for an expert opinion or treatment; also, the behavior of the specialist who at a consultation is more concerned about his own glory and his own large fee than he is for the feelings, reputation or fee of his colleague who has requested his help, or, on the other hand, the attitude of the practitioner who at the consultation is more exercised over his own reputation than over the welfare of the patient and who resents a frank expression of opinion, no matter how gently and tactfully it may be advanced, if in any way it seems to hint at a criticism of his diagnosis or his handling of the case. And then there is the matter of fees—the split fee, inherently wrong because it is secret and underhanded; the disproportion between the large, sometimes exorbitant fee of the specialist and the meager fee of the practitioner, the operator perhaps receiving for an hour's work, largely mechanical, as much as the practitioner receives for six months of the hardest kind of physical and mental drudgery.

These are live questions. They have a bearing on the present-day trend toward specialism. They often lead to a straining of the relations between these two classes of physicians; they are among the causes of the oft heard rancorous protest on the part of the practitioners against the smaller privileged class of specialists who seem to them to be reaching out more and more after the glory and the major portion of the financial returns, and who are now banding together in groups, corporation-like, in such a way as still further with greater force because of greater mass, to bear down on the practitioner and to crush him dry of the privileges he regards as his due.

These features I shall not dwell on, but they must be remembered when we are planning to create a still higher type of specialist. No matter how lofty and altruistic our motives—and we know they are unselfish—we cannot afford to ignore the possible antagonism of irate practitioners who may unite to protect their real or fancied right. There should be evolved some readjustment by which the practitioner who now feels that he is treated as of secondary importance may not have cause to complain that he is still further degraded. If the discussion of these questions can be lifted from the level of trade or business to that of profession, if the specialist will oftener put himself in the place of the family physician and vice versa, and if, above all the good of the patient—or call it the public if you prefer—is the prime consideration, many of the difficulties of conduct, ethics, fee, relative glory will disappear, and the solution of some of the problems involved in the development of specialists, with which problems this committee is to be occupied will be comparatively simple.

Leaving the subject of the ethical relations of the practitioner and specialist, we may ask in the expressive language of the day, Why is a specialist? Also, What is a specialist and how is he to be made? Who is entitled to be so called? I offer but fragmentary and incomplete answers to these questions.

Essentials of the Specialist.

For a physician merely to announce that in the future he will limit his practice to a certain kind of disease does not suddenly trans-

form him into a specialist. Exceptional knowledge or unusual technical skill are prerequisites. Many self-styled specialists do not possess these essentials.

Other things being equal the best specialist is the one who develops from the general practitioner—I assume previous high-grade college degree, a service as an intern, a studious, progressive mental attitude during the years of practice. That men may begin to specialize from the day of graduation or even before graduation and become competent and successful is true. In many instances I regard such an early specialization as proper. An internship in, or better, a position on the attending staff of, a general hospital is a partial substitute for the years of practice; but here the knowledge of slight ailments, and of the beginnings of disease and their frequently slow progress is lacking; it is chiefly the serious illness and the terminal stage that are studied by the hospital physician. Sir James Mackenzie's strictures on the workers in the laboratory and the wards of the hospital are provincial and largely undeserved; but one must in the main agree with him in his encomium of the general practitioner. Without these years of general training, the specialist fails to understand the problems that vex the family physician. He lacks breadth of vision; he sees only tonsil, tooth, appendix, heart murmur, achylia or displaced uterus, and sees them unduly magnified; he is using the oil immersion lens before knowing the relation of parts that would be shown by a preliminary study with the lens of lower power. Sometimes, conscious of his limitations, yet desirous of being thorough and of escaping the charge of superficiality, he searches for causes and relations other than those directly associated with his own specialty; he strives to be broad visioned and up with the times. But the picture that he sees lacks background, perspective, light and shade; the figures in it are to him isolated and unrelated to each other; and without experience, his interpretations are strained, artificial and illogical. Without due proof, disease may be referred to pathologic conditions not causally related. In this way arise the fads of medicine and surgery, the needless sacrifice of teeth and tonsils, the operative correction of supposedly serious yet really trivial architectural defects in the pelvis, the whims about diet that are mistakenly regarded as the embodiment of physiologic principles, the routine use of remedial agents, be they drugs, vaccines or water cures, that are prescribed not only unscientifically but at times not innocuously.

That this type of specialist is far from ideal is clear. That—to apply our test of the greatest good to the patient—he fails to render a maximum of efficient service and is thus found wanting is also plain. What is needed is the analytic mind, the sane judgment of the wise man of experience. Knowledge comes, but wisdom lingers.

Relation of Practitioner and Specialist.

What is the relation of the practitoner and specialist in the future? We are in a transitional stage, the practitioner losing ground, those calling themselves specialists increasing in number and rapidly uniting into groups With the enormous increase in the bulk of medical knowledge, the bewildering complexity of new facts in every line of medical work, the insistent demand for technical skill of a high order, the physician has perforce to concentrate on a single topic or on a few to avoid spreading himself out too thin. It is no more than justice that in difficult cases aid should be asked of others, often of several experts: and the economical, practical way of making such help available is by co-operation in groups. Group medicine in some form is to be given a trial; it should be. In just what form it will survive, who can say? Groups gathered about men of commanding personality, groups in private or semi-private hospitals, groups connected with university hospitals or dispensaries, may all have their places. These types and various others have been well described by Dr. Leonard[1] of Duluth. Unless some working plan is devised by which patients of moderate means are to receive the benefit of the skill of specialists, the state may step in to see that they do receive it, and may step in in ways not altogether pleasing to the medical profession. Means should be devised by which the best interest of the physicians, and their rights as individuals and as a class, are protected. The plan recently set forth by Dr. Billings[2] is worth serious thought and has the very commendable feature that, while looking out for the interests of the patient and recognizing the necessity for specialists, it protects the rights of the practitioner.

There are dangers connected with group practice—danger that a machine-like routine instead of an individualist investigation may be made; danger that the results of the various technical examinations made by the individual members of the group may not be reviewed and correlated by some sane, masterful, judicial mind that will see that this assembled diagnosis is made up of parts well fitted and joined together; danger that the practice may be commercialized, that the group may become a profiteering corporation, and that the profession of medicine may yet further degenerate into a trade.

What will be the relation of the general practitioner to the group? Will he be in good standing with it? Will he be able to retain his position as family adviser to the patient who enters the portals of the group? Will he have rights in the group hospital? What will be his exact status in the community hospital? Is it possible that he may shrivel up into nothing more than a physician who makes a tentative diagnosis and who, like the examining room doctor in the hospital or the distributer in the dispensary, assigns the patient to the proper specialist or group?

Will there be a general practitioner? May he not finally become merely an emergency physician called in for minor ailments or when the specialist is not available, but not expected to treat the case of pneumonia or of chronic constipation, to operate on the patient with hernia or empyema, or to manage the case of eczema or give the arsphenamin? Indeed, in our larger cities this is already to a considerable degree his present position. Well-to-do or even poorer people go to Dr. A. if they suspect appendicitis, to Dr. B if they fear tuberculosis, to Dr. C. if they think it is the goiter that is causing trouble, to Dr. D with the baby. They have their list of supposed experts and, ignoring their family physician, their "ordinary doctor," as he is sometimes called, they go to the specialist, preferably the professor. Perhaps in the future they may go to Group A or B or C, the particular group chosen because of its reputation as surgically or medically skilful, as especially careful in examination, as moderate in charge, or as having a comfortable waiting room with pleasant outlook over the lake.

And the practitioner? Perhaps he will refer cases to this group for the diagnosis which, with his limited knowledge and facilities, he is unable to make. Perhaps—occasionally—the patient will be returned to him for treatment; or, sans teeth, sans tonsils, sans appendix, sans ovaries, sans bank account, the patient will return to have the physician resume his position: not the honored position once held by the family physician, but that of ordinary or emergency doctor, the doctor who responds to calls in the night, sews up the scalp wound, prescribes the tonic for worn out nerves and who, if he has winning ways with children and is not too high priced, may be allowed to vaccinate the family or pull the loosened milk teeth.

I do not believe such a future is necessary. If it comes to pass it is largely our fault. There is a place for the family advisor, and we must strive to make that position one of honor, dignity and remuneration. Details of any such plans I cannot give. The problem will to a great extent solve itself by a process of evolution. In fact, in some communities I think I see working out what I would call the practitioner-group system. Not housed in one office, but living in the same small town the practitioners, while independent, tacitly recognize that Dr. A is better qualified to do surgery, Dr. B knows more about children, Dr. C has the roentgen-ray outfit, and Dr. D has unusual information about neurology. Each has his families, each cares and cares well for all ordinary cases of sickness, each recognizes his own limitations and is free to call on his colleagues for help, or when necessary to advise the services of the specialist or groups of the city, or of the hospital in the larger town nearby. This is a retention of the family physician idea. The doctor does not lose his self-respect; he is at peace with his colleagues; he co-operates with the group of experts, and the best interests of the patient—the sensible ones who will take any advice—are concerned. If he does not regard it as beneath his dignity to take the temperature, or to help give a sponge bath or an enema; if he is willing to take the time to make a pelvic examination or to look at an ear drum, things which the older type of family physician used to do well, he will find his patients appreciative of his efforts to save them unnecessary expense for nurse or specialist.

Training of the Specialist.

I wish to add as an appendix—which some of you may think is a disease and should be cut out—that there is need of caution in the advances we are striving to make in the training of specisialts. This body is trying to lay down principles that shall guide in the creation of experts in various branches of medicine and surgery. May we not go too far? Do we stop to consider what some of our plans imply? Do we realize what the conditions we are imposing mean to one desiring to qualify as a specialist? Take the time element alone. He must have had at least two years of college work—some say three, some four—with inclusion of certain studies. He must take four years of general medical studies and one year as an intern. We prefer to have him serve for a few years as a general practitioner, and then we are asking him to drop out of practice, again go to school, to take three years of special work. How old will he be at this time? How much of his useful enthusiasm will remain to him? Are we not forcing him to spend in preparation his most impressionable years, the years of initiative? When will he begin to do, to accomplish? And is all of this necessary or wise? Shall we have as good a product, one as able to serve the patient and the public? And are we not forcing the majority of those who will specialize into a condition of financial parasitism, relief from which will be followed by a reactionary greed for gain? Most boys must depend on their parents to put them through college and the medical school. Are we now to ask them for a longer period to be dependent on others for help? Will not proud, self-reliant men shun such a plan? May not many desirable men of moderate means be debarred?

These are questions that may be asked. To some of them I see fairly satisfactory answers; regarding others I am not at all clear. A partial answer is the one offered by the Mayo Clinic in its plan of paid fellows, residents and assistants. An answer that is much talked of and is generally unwelcome to the physician is the one involved in the increasing tendency toward paternalism of the state toward the medical profession.

Our medical curriculum may be modified and thus shorten the road to specialism. It may be wrong, it may be heresy to question the correctness of the position that our medical schools should be concerned with turning out only general practitioners. At the risk of re-

versing myself and contradicting much that I have said before about the evolution of the specialist from the practitioner, I venture the prediction that the time is not far distant when many of our medical undergraduates will to a certain extent be allowed to specialize before they receive their diplomas. The medical school will have to make this possible. It is done in our literary colleges today and in our technical schools. A few favored students in our medical schools are able to do it. The one argument that holds us back is the fetish of the general practitioner. No matter how much we lengthen the premedical course, no matter how much time and content are added to our undergraduate medical curriculum, we must forever be bound by the tradition that the college must turn out only general practi-tioners.

A practitioner is supposed to practice. He may be well versed in general principles and general knowledge, but the application must be to a specific case. Often this general knowledge enables him successfully to make this application. But modern medicine requires an unusual degree of technical skill, an immense mass of information if one is to do the best possible for the patient; and the fact is that no one man today can know much about all medical subjects; the human brain has not the capacity; and so our general practitioner is, after all, not really competent to treat in the best way all the patients who come to him for help. The telephone, automobile, electric and steam railways, hospitals of various types found even in our country towns, groups of specialists, make it easy to bring the patient to the specialist or the specialist to the patient. The old-fashioned work of the general practitioner is going, and his field of activity is being constantly more and more restricted. No one man, then, will be called on to practice in all branches of medicine as in the past, and if he tries to do this he will do it inefficiently, because it is a physical impossibilty for one small head to carry all thhe new (with apologies to Goldsmith).

Why, therefore, may our medical schools not lay down certain fundamental requirements in anatomy, physiology, chemistry, pathology, general medicine, general surgery, general clinical diagnosis, etc., courses that teach general principles, which courses must be mastered by all? But at the end of a certain time, perhaps two years or three years, grant some choice of work. There will still be retained the main courses for those planning general practice—and we can turn out a splendid type of general practitioner; there will be other courses or another grouping of courses for those who wish to specialize. Let me illustrate what I mean: At the end of his second or third year a student of 24 or 26 may have a definite idea as to the department of medicine in which he chooses to work. He knows, for example, that he prefers general surgery, or internal medicine or dermatology or ophthalmology, and he is, or ought to be by that time, mature enough to know his own mind. Why, if he decides on ophthalmology, should he be required to take a course dealing with the special details of obstetrics, the measurements of the pelvis, the mechanism of occipitoposterior position, etc.? Why should he be required to master the technic of the operation for extirpation of the kidney, laceration of the perineum or amputation of the breast? Why should he be forced to learn formulas for the artificial feeding of infants of various ages or to spend days in the study of the stools in cases of ulcer of the duodenum, carcinoma of the bowel, amebic dysentery or mucous colitis? May he not more profitably be engaged for a portion of his time in studies with a direct bearing on his chosen work? He may thus shorten his time of graduate work for specialism by at least a year. Is there any vital objection to this? The same principle might be carried still farther back in our system of education, to our literary and scientific colleges and even, as has been suggested by good educators, to our high and grade schools. Instead of putting all students of medicine through the same mill and turning them out at the age, say of 27, with the stamp of general practitioners, may we not allow or even compel our undergraduates to do as is required in many general cultural courses in our literary colleges, to major in some subject or group of subjects especially in his last two years. He would still be a qualified practitioner, but he would have more than a mere outline of each of the many subjects included in our curriculums of today. In some subject or perhaps two he would by concentration become something of an expert; he is an embryo specialist, if you please. When he goes out into general practice he will be likely to continue his studies of this topic and to become perhaps the practitioner-specialist of his neighborhood. At any rate, he is a better general physician for knowing one subject thoroughly than because he knows all subjects only fairly well. Our bright students are doing this today. They help and do extra work in the pathologic laboratories, in the department of electrocardiography, or in the surgical clinics. They are specializing. This is done in many of our technical schools. Our schools of engineering have certain common required courses in English, foreign language, mathematics, physics, etc.; and then, branching out, stress for the one student electricity, for another chemistry, architecture or naval construction, depending on what branch of engineering he intends to pursue. Or they permit him, if he chooses, to take the all round mechanical engineering course, comparable to a general practitioner course.

These ideas are suggestive only. They may be ill-timed, crude and half-baked. I admit contradictions and inconsistencies.

Summary.

A paper is supposed to end with conclusions. But what is one to do who has not even in

his own mind reached a satisfactory solution of the problems presented, who has not reached conclusions?

Briefly summarized, the thought running through this paper is that there is an inevitable and justifiable trend toward specialism in medicine. This committee is engaged in the laudable attempt to see that only those qualified shall be regarded as specialists. The creation of a class of approved specialists will serve to draw more sharply than ever the line between specialist and practitioner between which classes relations are already somewhat strained. It is necessary to proceed cautiously to be sure we do not set our standard for the specialist so high that we defeat our own purpose by shutting out many desirable men, that we do not create a type of superspecialist that will still further arouse the antagonism of the practitioner. In all our planning we must devote more time to a consideration of what should be done for the unfortunate practitioner. If he is doomed, what is to take his place? If he can be saved, how is his salvation to be wrought?

Furthermore, there is advanced the idea that while the primary function of the undergraduate medical school is to educate a high grade general practitioner, there are many students who may in their last year or two concentrate on some one subject, in reality begin to specialize. By so doing, they save time if they are to practice a specialty. If they do not specialize, they are better practitioners for knowing one subject unusually well.

And I trust there has been manifest in this paper the thought that whatever we plan for specialist or practitioner, it must never be forgotten that the interest that is paramount is that of the patient.

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[1] Leonard, V. N.: The Significance of Group Practice. J. A. M. A. 76: 421 (Feb. 12) 1921; Private Medical Practice in Its Relation to the Idea of Progress, abstr. ibid, 76: 731 (March 12) 1921.

[2] Billings, Frank: The Future of Private Medical Practice, J. A. M. A. 76: 349 (Feb. 5) 1921.

Orthopaedics

Alonzo Myers, M. D., Department Editor

Gastroradiculitis from Pott's Disease.

(Progres Medical, Paris, April 9, 1921.)

Ramond and Jacquelin refer to recent works by Bouchut showing the frequency of inflammation of nerve roots in cases of alleged painful dyspepsia. The radiculitis is often of syphilitic origin, and subsides under proper treatment without any measures directed to the stomach. They report here a case of tuberculous vertebral caries which was responsible for the pains in the stomach. They have also encountered a case of chronic gonococcus disease of the vertebrae entailing intense pain in the stomach. The gastric symptoms from this radiculitis may suggest gastritis, ulcer or spasm, and their rhythmical appearance is often misleading. The pains may spread from the epigastrium to the back, the interspaces and the flanks. Sometimes the remote pains are hard to reconcile with a stomach lesion. In the tuberculous case the oppression in the stomach followed at once after the meal, and in fifteen minutes the pain became intense, with cramps, and spread to the back, to the point of the tuberculous lesion. Then came regurgitation, and three or four hours after the meal there was a burning pain in the stomach for a few minutes. Then the cycle closed and there was peace until the next meal except for general asthenia. These symptoms apparently indicate total gastritis, but the stomach is normal except for the over-sensibility from irritation of the splanchnic nerves. Milk is liable to induce a burning pain, and the meal exaggerates the pain as a rule. Sodium bicarbonate gives no relief, and may intensify the pain. Opium and cocaine usually help. By tracing the gastric disturbances to their source causal treatment may be instituted.

Backache and Anatomic Variations of Lumbosacral Region.

(Journal of Orthopaedic Surgery, Lincoln, Neb., May, 1921, 3, No. 5.)

Roentgenograms of 300 patients with backache were examined by O'Reilly. Tracings were made from 199 and these were studied for variation in the scaro-iliac joints, the transverse processes of the fifth lumbar, and other changes. These tracings could be divided into three definite types. In Type 1 the sacrum is fairly high between the ilia. It is fairly broad and the upper border extends to, or a little beyond the line of the iliac crests, before it curves to form the line of the sacro-iliac joint. The crests of the ilia curve at an angle of about forty-five degrees. The distance between the posterior portion of the crest and line of the sacro-iliac is fairly broad. This is a mixed type and

is found in both males and females. In Type 2 the crests are almost vertical. The outlines of the posterior spines of the ilia are sharp and angular. The general impression is that the sacrum is narrow and is set low between the crests. The line of the scaro-iliac is well beyond the shadow of the crests and the distance has a tendency to asymmetry. The sacro-iliac may be either broad or shallow. This is almost exclusively a male type. Type 3 somewhat resembles Type 1, but the sacrum is wider; the curve of the sacro-iliac begins before it crosses the shadow of the ilium, so that there is a distinct notch. In Type 3, the shadow of the sacro-iliac is more shallow than in Types 1 and 2. This is a female type. All these types show some variations and many irregularities.

Circular Constriction in Treatment of Fractures of Long Bones.
(Lyon Chirurgical, Lyons, France, March-April, 1921.)

Putti of Bologna, Italy, gives an illustrated description of his method of belting the fractured bone which he has been using for eight years in a total of over 100 cases. It was introduced in this country a year or two later by Parham. Putti uses two of the metal "ribbons," each usually 3 mm. wide by 250 mm. long, applying them with a small instrument which draws them tight and buckles back the end. With a transverse fracture he applies the belts over a narrow, rubber-covered steel plate, with two grooves for the two metal belts. In the majority of his cases the metal caused no disturbance, becoming embedded in the normal callus. Only rarely has he been obliged to remove this buried prosthesis later, on account of subjective disturbance. The metal strips can be applied inside or outside of the periosteum. In infected cases, this cerclage au ruban, applied temporarily, often renders good service.

Clinical and Professional Notes

J. Allison Hodges, M. D

THE NURSING SITUATION AND ITS REMEDY.

(Continued from June Issue)

It is entirely evident from the facts stated in last month's article that many of the causes, as well as some of the results mentioned, cannot be obviated nor prevented.

In attempting to reach a practical basis for solution of this question, it was decided to interview by letter a number of physicians, and also to consult with the presidents of the different nursing organizations in the State, and to this end a letter was sent to the presidents of sixty local medical societies, and, as it was thought that their opinions would be representative of the profession of the section in which they lived, they were requested to give their opinion as to the course of training for nurses on the two following points:

(1) The wisdom and apparent necessity of reducing the period of nursing education to a two-year curriculum for applicants with a high school diploma;

And, if this could not be effected,

(2) The wisdom of establishing, through some State agency, or otherwise, a school for giving an intensive but limited course in practical nursing, with no diploma, but a certificate as trained or licensed attendant.

In reply to this questionnaire, sent to sixty physicians, forty-two answers were received, and a summary of the opinions is as follows:

(1) Two physicians disapproved of both alternatives;

(2) Forty approved of some general method of reducing the course of training in some way to meet the present necessities;

(3) Thirty-four recommended a specific reduction of the three-year term to a two-year curriculum, a small proportion advocating an ordinary Grammar School education as a preliminary preparation, and the rest preferring a high school diploma as a preliminary educational requirement;

(4) Thirty-nine approved, and the great majority urged the establishment of the course for trained or licensed attendants.

Other suggestions were made as follows:

(1) That all nurses who make a combined average of more than 75 per cent in Class "A" hospitals, be graduated at the end of two years, and that those who fail to make this grade be given an opportunity to graduate at the end of 2½ years, and that an official commis-

sioner be appointed to grade all hospitals maintaining training schools;

(2) That the nurses' legal status for graduation be similar to that of druggists, and registered assistant druggists with lower salary for the latter;

(3) The reduction of the term of training for a high school graduate to 2½ years, and the establishment of an intensive short course in practical nursing for those who have not this educational qualification, the two courses not to be given in the same hospital;

(4) The initiation of a two-year curriculum for graduate nurses, and also the establishment of some central organization, State or otherwise, for intensive training, but both classes of nurses to have distinct uniforms, and a difference in salary.

Personal Recommendations.

The future training schools for nurses must be made so attractive and so satisfying that the high school girls who have been taught the value and vision of personal service will be imbued with the idea of nursing as a career, and if this is done, the handicap to both private and public health nursing, because of lack of nurses, will be removed.

If a nurse is educated before she comes into a training school, she should receive a credit for this, and surely in the future there will be for such nurses an academic reward by allowing them to earn both their combined nurse and specialist degrees in a shorter period of time.

The past education of the nurse in training schools, like that of the doctor, has had a great deal of padding in it, and in the future rearranged course, the useless must be elimminated, and all schools put on an educational basis, rather than on the old idea of apprenticeship in the hospital.

Sir James MacKenzie, the great medical philosopher and brilliant general practitioner, in speaking of medical education, and the same applies with equal emphasis to that of nursing, says: "It is far better to be trained to understand a few matters thoroughly than to have a superficial knowledge of a great many things."

Ideally, I would prefer to see established a central State Nurse Training School, where pupils educated in the State public school system could continue their professional courses on terms and a combination of courses similar to those prevailing in other State institutions, such as normal colleges for teachers, etc., for the necessity for nurses is almost as great as for teachers, but I know at this time that this method is difficult of practical realization. The whole matter of nurse training now must be reduced to a practical working basis to supply a demand which is insistent and increasing, and a plan must be evolved that will educate first, and afterwards train pupil nurses in the best possible manner.

This, then, practically resolves itself into a curriculum that will be instructive and will, in a measure, teach the pupils by clinical methods more largely than in the past, just as medical students are taught to observe, to think and to apply their knowledge. This will require special teaching facilities that can be easily provided in an adequately equipped general hospital where the pupils can observe and study personally the conditions and disease expressions of the more common illnesses, as they exist in everyday life.

This will mean the elevation of teaching standards over the old method, where a nurse's labor was put above her instruction, the nurse consequently becoming only a by-product of the institution.

With this reorganized method of putting foremost the nurse's training, it is believed that an enthusiasm would be evoked which would result in a large increase in the number of nurse entrants into the profession.

To obviate, then, the past faults of the present system, and to meet these new requirements, my personal recommendations, after thoroughly studying the proposition from all angles, and feeling that, in order to get results that will be permanent and beneficial, we must "give and take," without lowering the standards in any way, but rather advancing them, are as follows:

(1) The institution of a two-year revised and reorganized course of training for students of good moral character, and more than 18 years of age, presenting credentials of not less than two years of high school education, or its equivalent, thus putting a premium on "preparedness," by the subtraction of the third year of the professional course

and the addition of one year, at least, to the predominating scholastic course.

(If the above is not acceptable to the representatives attending a future meeting for the discussion of this subject, then

(2) The three-year curriculum, as at present, to be retained for graduate registered nurses, and that there be established also a 12 months' practical training course for attendants, in which the first three months shall be devoted mainly to theoretical training, and the subsequent nine months to the combined theoretical and practical work, such pupils to receive a certificate, with the title of "Licensed Attendants," and this course to be open to all applicants more than 19 years of age and of good moral character, and presenting educational credentials from a grammar school of the public school system, or its equivalent; the three months of theoretical training in the above course to be given in such training schools connected with general hospitals in the State, as are acceptable to the State Board of Nurse Examiners, and the nine months of practical work to be given in hospitals in the State, similarly accredited and acceptable.

The revised course of training for nurses submitted (No. 1) is decidedly my personal choice, and is intended to give an opportunity to young women who will naturally take the high school courses to round out their education by having only two years of specialized professional work to accomplish before their education is wholly completed. It is believed that this would induce a better qualified element to undertake the profession of nursing, and at the same time place the profession itself on a basis which would be competitive and attainable without undue length of time in professional preparation. It is my opinion also that better nurses will be the result of this method, for I do not believe that a three-year training course is absolutely necessary for the preparation or perfection of a well qualified nurse.

The present method, of the addition of a third year, was instituted originally to give the hospital authorities an opportunity to remunerate themselves in the last year of the nurse's training by utilizing her as a private duty nurse to increase the income of the hospital. This method is indefensible, and in my opinion, has resulted, in the case of the average well prepared nurse, in cheating her out of one year of her life work; for, to educate nurses properly, it should not be done in training schools on the theory of resultant financial reward, but on the theory of actually training the nurse by teaching the pupil.

Furthermore, even in a three-year period it is impossible to teach or attempt to teach the basal sciences of medicine, for even now, in studying the curricula required by different examining boards, it is seen that the courses are unequally balanced as to theory and practice, and that frequently too much stress and time are devoted to making a "Nurse-Doctor" instead of a nurse proper.

It is unnecessary to criticise, but only to mention some of these requirements, to prove the truth of this statement; one board, for example, requiring only eight periods of instruction in "Diet in Disease," and 16 periods of instructions in "nursing in diseases of children (including orthopedics and infant feeding)," the latter requirement being exactly the number of periods required, for instance, in bacteriology, a most difficult scientific study, and of little importance and less value to the student nurse, while on the other hand, only 24 periods are scheduled for the whole subject of the anatomy of the human body. It must be evident that such a course naturally leans too much towards theory, or abortive efforts to learn it, and not sufficiently towards the more common and practical necessities of private nursing.

It is readily admitted that this question is a most difficult one, and that the problems have been met as successfully as possible by the examining boards, hospitals and training schools, which have labored faithfully, but there is still necessity for improvement.

I am, personally, heartily in favor of higher standards, but especially in higher standards of scholastic preparation for the work, and believe that all things being equal, proper preparation will give a better nurse in a shorter period of training. Recently, in examining the registration of nurses in the State of New York, I was impressed with the fact that a number of the

training schools that had been previously giving a three-year course were decreasing the length of their training courses to two years and two months, or two years and three, four and six months, and those hospitals still maintaining a three-year course were devoting the last year mainly to therapeutic specialties and professional problems.

The statutory requirements for graduation of nurses in that State (New York) are a course of at least two years and a preliminary education of at least one year of high school, or its equivalent. The statutory requirements for a registered nurse in the State (Virginia) are graduation from at least a two-year course in an approved training school connected with a general hospital, and evidence of "sufficient preliminary education, as may be determined by the board." Evidently, then, some changes can be made in the requirements for graduation of nurses without violence to existing statutes in the State of Virginia and without reflection upon present training schools or the State Board of Nurse Examiners, provided that, after the general conference alluded to above has met, it, in its wisdom, may deem such necessary.

(To Be Continued)

Neurology

R. F. Leinbach, M. D , Department Editor

The theory of the duality of the mind has been propounded again and again in past ages. Its origin doubtless could be traced back into obscure antiquity. For the most part, this concept has been propagated by religion and philosophy. Investigators of psychic phenomena have utilized the hypothesis to explain those manifestations of the human mind which apparently transcend the normal limits of consciousness. Reflexly, perhaps, the theory itself has been strengthened by their marshalled observations. About thirty years ago Dr. Thompson Jay Hudson attempted to define the separate elements and faculties of the two minds which he called objective and subjective. His differentiation was at once fanciful and plausible. Thus far the problem has not been amenable to methods of scientific investigation. However, some eminent men of science of a lately past generation have accepted the view of the duality of the mind. The conclusions of anyone who ponders the question will naturally be regulated by his views as to what constitutes unity and what duality.

We will not invite argument if we say that there is a duality to the functions of the mind. There is an intellectual mind capable of dispassionate analysis, of inductive and deductive reasoning and of formulating theories as to human relationships both physical and moral. It is generally held that this mind, or function of mind, is not found in the lower animals. The second element or function of mind embraces qualities which are intensely individualistic. Its manifestations are seen in the emotions. Similar functions are to be observed even in very low biological orders.

The duality of the physical body is perhaps even more apparent. An outer skeleto-muscular organism is to be noted which responds delicately to the will of its controlling mind; within exists a "visceral organism" composed of the abdominal and thoracic viscera and the vegetative nervous system. This organism is largely autonomous in its nature. In the case of lower animals it has been kept alive for thirteen and a quarter hours after the death of the animal to which the organs belonged (Alexis Carrel, A. M. A., Dec. 14, 1912). The visceral organism we know to be immediately, if not remotely, independent of the intellect and will. Intestinal peristalsis, the cardiac rhythm, glandular functions can be influenced neither in the direction of volitional activation or inhibition. We may disregard for the moment the rare cases now and then reported of the voluntary acceleration of the pulse rate. Such visceral functions, on the contrary, we have suspected to be influenced by shifting emotional states. The influence of the emotions on the cardiac rate are well known. Not so with the less easily probed visceral motor and secretory activities. These we apprehend only vaguely.

Dr. Walter B. Cannon, professor of Physiology of Harvard, in experiments reported recently in the Journal of Radiology concerning the movements of the small and large intestines in cats and other animals, has not neglected to

study with the X-ray the influence of the emotions on the intestinal motor functions. He says "Observations on the stomach of a cat showed that the peristalsis is inhibited whenever the animal manifests signs of anxiety, rage or distress. Many emotional states are a strong stimulus to peristalsis, but other emotional states inhibit peristalsis. In the cat the same conditions which stop the movements of the stomach stop also the movements of the intestines."

We may draw certain temperate conclusions from this. There are many men and more women whose life is one continuous, often intense, emotional strain from domestic, financial or other anxiety, who develop so-called "functional" disorders of the gastro-intestinal tract. The psycho-visceral reflexes, we must regard from the evolutional viewpoint, as purposeful and conservative, however, we shall fall into no error if we consider that prolonged and excessive reactions in the visceral zone, to emotional states are potent influences in the production of states of disturbed functional balance in the "visceral organism." We use the word "functional" advisedly, as it cannot be assumed that prolonged emotional states can initiate permanent structural changes. It would indeed be well in this day of stress if the race could learn the lesson of serenity, never presented in a more masterful way than by Sir William Osler in his essay, "Aequinimitas."

Nurses' Corner

Edith M. Redwine, R. N., Dept. Editor

The Nineteenth Annual Convention of the North Carolina State Nurses' Association, which met at Wrightsville Beach June 13-16, was one of the most successful meetings in the history of this organization. A detailed report will be given next month.

Officers for the year were elected as follows:

President—Dorothy Hayden, R.N., Greensboro.

First Vice-President — Columbia Munds, R.N., Wilmington.

Second Vice-President—Pearl Weaver, R.N., Asheville.

Secretary—Anna J. Howerton, R.N., Charlotte.

Treasurer — Jessie McLean, R.N., Greensboro.

Directors for Two Years—Lelia Idol, R.N., Winston-Salem; Lillian Ketchie, R.N., Winston-Salem.

Advisory Council—E. A. Kelly, R.N., Fayetteville; Mrs. Walter A. Auld, Charlotte; Josephine Mainor, R.N., Durham; Blaudens Biggers, R.N., Winston-Salem; Gilbert Muse, R.N., High Point; Mary P. Laxton, R.N., Asheville; Columbia Munds, R.N., Wilmington; Lois Toomer, R.N., Wilmington; Rose Myers, R.N., Raleigh; Edith Redwine, R.N., Monroe; Berdie Dunn, R.N., Raleigh; Cleone Hobbs, R.N., Greensboro; Dorothy Hayden, R.N., Greensboro; Mary L. Wyche, R.N., Greensboro; Pearl Weaver, R.N., Asheville; Jessie McLean, R.N., Greensboro; Martha Newman, R.N., Wilson; ———— Justice, R.N., Newbern; Anna Howerton, R.N., Charlotte; Athalia Ford, R.N., Asheville; Lelia Idol, R.N., Winston-Salem; Lillian Ketchie, R.N., Winston-Salem.

North Carolina League of Nursing Education.

The third annual meeting of the North Carolina League of Nursing Education was held at Wrightsville Beach, Oceanic Hotel, June 16th. Special features of the program were the demonstrations given at the James Walker Hospital, Wilmington, by Miss Sears, instructor of nurses, and the addresses by Dr. John T. Burrus of High Point and Dr. Thos. F. Jordan, medical director of the State Hospital at Dix Hill, Raleigh.

Dr. Burrus spoke of the need for higher standards in our training schools and the need of closer co-operation between the Nurses' Association and the Hospital Association in matters pertaining to the education of nurses. Dr. Jordan spoke on the subject, "Why Every Nurse Should Have a Part of Her Training in Hospitals for the Mentally Sick." He gave statistics showing the increase of insanity in the State and the need of more efficiently trained nurses to care for these people.

Two most interesting papers were prepared and read by student nurses, one, "The Advantage of the Full Time Instructor Over the Old Method of Teaching Student Nurses," by Miss

Eloise Thompson, a student nurse at the James Walker Hospital," the other on "Student Government by a pupil in the Roanoke Rapids Hospital.

Officers for the next year are as follows:

President—Mary P. Laxton, Biltmore.

First Vice-President—Virginia McKay, Wilmington.

Second Vice-President—Anna J. Howerton, Charlotte.

Secretary-Treasurer — Gilbert Muse, High Point.

Fayetteville (N. C.) District (No. 7).

The quarterly meeting of the Fayetteville (N. C.) District No. 7 Nurses' Association was held in the municipal building, Lumberton, N. C., June 1, 1921.

This was the occasion of a most happy social and scientific meeting. A four-course luncheon was served, and a number of musical selections rendered. After luncheon the regular business was transacted and several papers were read.

News Items

Dr. R. S. Cathcart.

Dr. Robt. S. Cathcart, Charleston, S. C., has joined our staff and hereafter will serve as Editor of the Department of Surgery. Dr. Cathcart is Professor of Surgery in the Charleston Medical College and one of the foremost men in his line in the South. We feel most gratified in securing his services, for he can speak with assurance, and his department will be helpful to every doctor in the South Atlantic Coast States.

Dr. Simon Baruch, one of the best known authorities on hydrotherapy in this country, died at his home in New York City, June 3, after a long illness. He was born in Germany 81 years ago and, after completing his academic education at the Royal Gymnasium of Posen, came to America. Here he studied medicine at the Medical College of Virginia, Richmond, from which he graduated in 1862. After this he joined the Confederate Army and served as a surgeon in the field, where he had many and varied experiences. At the close of the war, he located in Camden, S. C., where he remained until 1881 when he moved to New York. He was an ex-president of the S. C. Medical Association and was also at one time connected with the State Board of Health of that State. Later, he was professor of hydrotherapy at the College of Physicians and Surgeons, New York. Many of his writings on this subject have been translated into French and German.

Dr. John S. Clifford, Charlotte, N. C., joined a group of New York doctors June 15th for a trip to Europe. The party will visit the war districts and also the Universities, taking special courses in their respective lines. They expect to see the continent thoroughly, also England, Ireland and Scotland.

Dr. J. P. Matheson and **Dr. Alonzo Myers**, Charlotte, N. C., have returned from a two months' trip to Europe. They report the European hospitals filled with war cases so that the predominant idea in medical circles is "reconstruction" work, so that the greatest benefit now that comes to a doctor visiting Europe would be along these lines. Not only orthopaedic and plastic reconstructive surgery but also reconstructive general medicine in mending physical and mental war wrecks.

Incidentally Paris is crowded to overflowing with tourists from all over the world and general prices remain very much the same as during the war, but the lid is off. Paris, if possible, is even gayer than in pre-war days. Prices in Austria-Hungary are prohibitive and even so, accommodations almost impossible.

Vienna is not now an economical place for taking post graduate work.

Dr. Claude Squires, of Charlotte, N. C., was married July 8 to Miss Maude Shute, of Monroe, N. C.

Dr. Squires is connected with the Crowell Clinic of Charlotte, is a brother of the late Dr. "Jimmie" Squires, who was also connected with the Crowell Clinic and who lost his life in France while in the service.

Dr. O. L. Presnel, of Asheboro, N. C., was married July 6 to Miss Helen Corinne Freeze, of Richmond, Va.

Dr. and Mrs. Presnell immediately left for a two weeks' trip through the Virginia mountains.

Dr. Presnell expects to return about July 20 to Asheboro.

Lieut. Davis K. Summers Buried at Charlotte, N. C.

The funeral of First Lieut. Davis K. Summers, said to be the first American medical officer to lose his life in France, was conducted July 2, 1921, at the graveside in Elmwood cemetery.

Members of Hornets Nest Post (No. 9), American Legion, acted as pall bearers. Legion members, War Mothers and Woman's Auxiliary attended the services.

Dr. Summers entered the service at Chattanooga, Tenn., and was among the first to go overseas and the first medical officer to lose his life in France.

The remains were brought to Charlotte for interment, where his father and mother are buried.

Charlotte V. D. Clinic.

During the month of June there were 2,771 treatments given at the Charlotte V. D. Clinic according to the report of Dr. R. M. Kimbrough, chief clinician.

383 smears.
337 Wassermans.
69 Antirabic.
53 Nose and throat.
37 Orthopaedic.
38 Surgery.
1854 Treatments.

Records at City Health Department (Charlotte, N. C.) show that 15 persons have been given pasteur treatment.

North Carolina Dental Society.

The North Carolina Dental Society held its annual meeting in Charlotte, June 28-29-30, with 300 delegates in attendance. Fifty new members were admitted to the society at this meeting. Wrightsville Beach was selected as the meeting place for 1922.

The officers elected for the coming year are:

President—Dr. W. M. Robey, Charlotte.

President-Elect—Dr. Robert L. Horton, Raleigh.

Vice-President—Dr. John J. Battle, Rocky Mount.

Secretary—Dr. H. O. Lineberger, Raleigh.

Treasurer—Dr. R. M. Morrow, Burlington.

Essayist—Dr. Brownie Lee Lewis Crump, Laurinburg.

Examining Board—Dr. J. Martin Fleming, Raleigh; Dr. F. L. Hunt, Asheville.

Delegates to National Convention—Dr. J. Conrad Watkins, Winston-Salem; Dr. F. L. Hunt, Asheville.

Alternates—Dr. R. M. Morrow, Burlington; Dr. J. H. Judd, Fayetteville.

The lectures, scientific papers, discussions and clinics were of the very highest character and the three days' meeting proved one of the very most enthusiastic and helpful in the history of the society.

The North Carolina Medical, Pharmaceutical and Dental Association (Colored).

The North Carolina Medical, Pharmaceutical and Dental Association held its thirty-second annual session in Charlotte June 21, 22 and 23. Several papers of more than usual interest were presented. Nine operations, including trachelorraphy, appendicectomy, supravaginal hysterectomies and tonsillectomies, together with a demonstration of rectal anaesthesia, were features of the clinics at Good Samaritan Hospital. The following operators and assistants contributed to the success of the clinics: Doctors A. H. Ray, Henry Hall and J. C. Williamson, of Winston; J. W. V. Cordice, of Aurora; J. J. Plummer, of Raleigh; T. C. Tinsley and W. C. Strudwick, of Durham; L. O. Miller, of Asheville; R. S. Holliday, of Statesville; J. B. Davis, of Louisburg; N. E. Jackson, of Laurinburg; C. W. Furlonge, of Smithfield; E. E. Blackman, J. A. Pethel, J. T. Williams, A. J. Williams, and E. F. Tyson, of Charlotte.

The Association feels especially grateful to the Mecklenburg Medical Society for its interest and encouragement in the proceedings as manifested by the presence and discussions of some of its personnel and by papers contributed by Doctors A. J. Crowell and Oren Moore, in particular.

Aside from increased efficiency, which is the desideratum of our delegates in attendance, especial emphasis was placed on the lay advantage of education and extension of public health activities as advocated by the principal

speakers of the session, viz., Prof. N. C. Newbold, Director of Negro Education, Raleigh, and Dr. Roscoe C. Brown, U. S. Public Health Service, Washington, D. C.

The following officers were elected for the ensuing year:

President—E. F. Tyson, M.D., Charlotte.

First Vice-President—A. S. Nurse, D.D.S., Durham.

Second Vice-President—R. S. Hairston, Ph.G., Winston.

Secretary-Treasurer—Clyde Donnell, M.D., Durham.

Reporter—J. B. Davis, M.D., Louisburg.

Forty-nine New Doctors Secure N. C. License.

The following forty-nine applicants passed the examinations of the Board of Medical Examiners of the State of North Carolina and will be granted a license to practice medicine and surgery in the state. These examinations were held in the city of Raleigh beginning June 20, 1921.

Dr. William A. Kirksey, of Morganton, made the highest average grade on examination, it being 95 5-7 per cent. Dr. Ernest H. Alderman, of Greensboro, was second highest with a grade of 94 per cent. Dr. Roy C. Mitchell, of Mount Airy, was a close third with an average of 93 5-7 per cent. Eighty-two applicants took the examinations, of this number 26 took only the examinations of the first two years.

The list of names and addresses is as follows:

Ernest H. Alderman, Greensboro; Arthur C. Ambler, Asheville; Osbourne O. Ashworth, Asheboro; Francis M. Aycock, Richmond, Va.

Maurice E. Baker, Lawndale; George E. Bell, Wakefield; James H. R. Booth, Lemon Springs; Tilman C. Britt, Orrun.

Verne S. Caviness, Cary; Donnell B. Cobb, Goldsboro; George Collins, Charlotte; David A. Coper, Henderson; Sherrill G. Corpening, Brevard.

Michael E. DuBissette, Smithfield.

Fred R. Farthing, Boone; Joseph A. Fleetwood, Jackson; Allen G. Flythe, Jackson; Theodore W. Folson, Asheville; Glenn R. Frye, Statesville; Walter E. Futrell, Conway.

Kenneth B. Geddie, Rose Hill.

James N. Harney, Plymouth.

James J. Kirksey, Morganton; William A. Kirksey, Morganton.

Critz F. Lambert, Philadelphia; Waite L. Lambert, Moffitt; Bessie E. Lane, Auburn; Martin E. Lane, Fountain; Isaac H. Lutterloh, Sanford.

Charles W. Millender, Asheville; Roy. C. Mitchell, Mount Airy; William B. McCutchean, Rougemont.

James O. Nolan, Lawndale; Stephen C. Nowell, Jr., Winfall.

Hugh Parks, Harmony; Isabelle H. Perry, Henderson; Robert E. Perry, Mount Olive; Malory A. Pittman, Aulander.

Fred R. Robbins, Lenoir.

Anderson J. Smith, Black Creek.

Franklin C. Smith, Louisburg; Joseph E. Smith, Richmond, Va.; Jacob L. Sowers, Linwood.

Bailey T. Talley, Angier; Shohone R. Taylor, Kinston; Samuel E. Teague, Sanford, and Adam T. Thorpe.

Elizabeth R. Vann, Raleigh.

Seba L. Whitehead, Scotland Neck; William G. Wilson, Jr., Wilson's Mills.

The following physicians were granted license by reciprocity upon the presentation of proper credentials, of which there were 32:

Julian W. Ashby, Raleigh.

Felix O. Bell, Reidsville, Ga.

Aulsey L. Denton, Castalia; John W. Dyers, High Point.

Carlyle J. Edwards, Cary; John E. Evans, Wilmington; Ephriam M. Ewing, Asheville.

Jere D. Freeman, Wilmington.

Lucius G. Gage, Charlotte; Patrick L. Gordon, Charleston, W. Va.; Thomas L. Gore, Wilmington; Berryman Green, Jr., Alexandria, Va.

Clyde H. Hasley, Charlotte.

Erastus E. Holt, Portland, Maine; J. Elizabeth Hoyt-Stevens, Raleigh.

Robert R. Ivey, Biltmore.

Edward King, Asheville.

Eva M. Locke, Lexington, Ky.; Roy C. Long, Asheville.

Burnice E. Morgan, Asheville.

Charles L. Nance, Peachland; Charles S. Norburn, Philadelphia, Pa.

Charles Phillips, Wake Forest; Ernest M. Poate, Southern Pines.

George M. Randall, Linville; Thomas C. Redfern, Winston-Salem; Ira J. Stoner, West Durham; James L. Stringfellow, Waynesville.

Henry P. P. Thompson, Highlands.

John LaBruce Ward, Columbia, S. C.

Bahnson Weathers, Wilmington; Homer C. Wysong, Wilmington.

One applicant was granted a limited license to practice in three townships of Wilkes county, William E. Whittington, Reddes River.

Twenty-four New Dentists Obtain N. C. License.

Twenty-four of the thirty-two applicants for license to practice dentistry in North Carolina, who took the examination in Charlotte, were granted license by the North Carolina State Board of Dental Examiners, according to the announcement of Dr. F. L. Hunt, Asheville, secretary.

The examinations were given June 25-28, preceding the annual convention of the North Carolina Dental Society, by members of the examining board, including Dr. J. Martin Fleming, Raleigh, president; Dr. Hunt, secretary; Dr. J. H. Wheeler, Greensboro; Dr. J. S. Surgeon, Hillsboro; Dr. C. A. Thompson, Wilson; Dr. J. S. Betts, Greensboro.

Included in the list was one young lady, Miss Jessie Ray Zachary, of Sylva, who had already passed the Georgia board and had won highest marks in the examination given by the South Carolina board.

Two negro applicants, U. S. Gunthorpe, New Rochelle, N. C., and J. C. Morgan, Washington, D. C., were granted license out of the five colored applicants taking the examinations.

The twenty-one white men granted license are announced by Dr. Hunt, as follows:

Doctors C. H. Teague, Madison; W. R. McKaughan, Kernsville; W. E. Murphy, Farmville; E. C. Bumgardner, Casar; J. E. L. Thomas, Rocky Mount; L. M. Foushee, Jr., Jonesboro; W. R. Cline, Monroe; O. A. Bristow, Saluda; R. F. Jarrett, Dillsboro; H. J. Lamons, Greenville, Tenn.; A. M. Jackson, Miami, Fla.; H. W. Thompson, Hamlet; W. E. Clark, Apex; J. C. Tyree, Rocky Mount; D. W. Holcombe, Elkin; O. G. Barnett, Spencer; A. U. Boyles, Dallas; J. K. Bryan, Oxford; O. P. Lewis, Rutherfordton; V. B. McKaughlin, Mason-Dixon, Penn.; F. Davis, West Asheville.

Gastonia (N. C.) Doctors Entertain.

Dr. Oscar L. Miller, the new surgeon in charge of the North Carolina Orthopaedic Hospital, and Dr. Michael Hoke, of Atlanta, were the honor guests when Dr. T. C. Quickel entertained the local physicians and the visitors at a luncheon at the Country Club, Gastonia, N. C., July 8.

Practically all the local doctors were present. Drs. Garrison and Glenn extended words of welcome. Dr. Miller graciously responded to this welcome and then outlined his plans and hopes for the new institution.

The North Carolina Orthopaedic Hospital is the first of its kind to be established in a southern state and there is every reason to expect it to at once take its proper place among the leading hospitals of the country.

Dr. Miller, who graduated from the Atlanta College of Physicians in 1912 and licensed in Georgia in 1912, has been associated with Dr. Hoke for a number of years, doing orthopaedic surgery and comes to the new institution very ambitious to carry out its aims and purposes successfully.

Dr. Hoke is a native of Lincoln county, N. C., and has won a place as an accredited authority in orthopaedic surgery throughout the county. He will be a consultant on the staff of the North Carolina Orthopaedic Hospital.

Dr. Wallace Calvin Abbott.

Dr. Wallace Calvin Abbott, who died at his home, 4605 N. Hermitage Ave., at 1:30 a. m., July 4, was born in Bridgewater, Vermont, October 12, 1857. His early education was obtained at the State Normal School, Randolph, Vt., the St. Johnsbury Academy, St. Johnsbury, Vt., and Dartmouth College, Hanover, N. H. Going west, he worked his way through the University of Michigan, winning his degree as Doctor of Medicine in 1885. The following year he engaged in the practice of medicine in Chicago, building up a large practice on the North Side and winning many friends.

It was during this time that he established the Abbott Alkaloidal Company, now known as the Abbott Laboratories, of which firm he was president continuously from the time of its establishment, more than thirty years ago, until his death.

For several years previous to his decease, he had been in ill health. Anticipating his active retirement from

the large and successful business which he had founded, he placed the conduct of the Abbott Laboratories largely in the hands of his older employees, under a generous co-operative reorganization plan on which it has been operating for more than two years.

Doctor Abbott was a man of broad vision and great energy. He was an organizer of rare ability, warm-hearted and beloved by his employees, business associates and hundreds whom he had befriended.

He was co-author, with Dr. Wm. F. Waugh, of several medical books, including "The Practice of Medicine" and "Positive Therapeutics." He was also editor-in-chief of the American Journal of Clinical Medicine, now in its twenty-eighth year.

Doctor Abbott was a member of the Ravenswood Methodist Church, the American Medical Association, the Illinois Medical Society, the Chicago Medical Society, the Medical Editors' Association, American Drug Manufacturers' Association, American Pharmaceutical Manufacturers' Association, Ravenswood Lodge 777, A. F. & A. M., the Oriental Consistory and the Shrine.

He leaves a widow, Clara A. Abbott, and a daughter, Eleanor Abbott.

Resolution.

The following resolution was passed at the fifty-second annual meeting of the American Medical Editors' Association, June 7th, and the secretary was authorized to send you a copy for publication.

J. MacDONALD, JR.,
Secretary American Medical Editors' Assoc.

Whereas, the medical restrictions of the Volstead Act, together with its various administrative and other interpretations and rules and regulations and enforcements, etc., constitute in some of their effects, indictment of the medical profession and harrassment of the medical practitioner and the sick, and are obstacles to free pursuit of honest medical judgment and therapeutics, and have reacted to the detriment of society and the public health and are opposed to public policy;

And Whereas, some of these restrictions and rules and regulations and interpretations, etc., are not based upon concensus of medical experience and practice and established usage;

And Whereas, it is apparent that they have not been framed and interpreted and administered with full appreciation of all matters involved;

And Whereas, the precedent established by the Volstead Act in restricting medical practice, should, if physicians value their therapeutic liberty, be met with a protest that will command attention.

And Whereas, the point at issue is the right of the physician to select his remedies, and to decide what doses of these remedies each patient requires;

And Whereas, this issue in no wise affects and has nothing to do with propaganda either for or against prohibition, but is purely a matter of preserving the necessary rights of the physician in the interests of public health and public policy;

Be it therefore resolved, That the American Medical Editors' Association protests against further undue regulation of therapeutic procedure by statutes or by administrative interpretation or regulation;

And be it resolved, That the Association requests of the proper authorities a review and revision of such existing statutes or rules or regulations as may be unduly restrictive of the therapeutic judgment and procedure of physicians.

We ask this for the preservation of the necessary rights of the medical profession and in the name of public welfare and wise public policy.

Publications Received

OPERATIVE SURGERY. For Students and Practitioners. By John J. McGrath, M.D., F.A.C.S., Professor of Surgery Fordham University; Consulting Surgeon to the People's Hospital, New York. Sixth revised edition, 863 pages; 369 illustrations. Price $8.00. F. A. Davis Company, Philadelphia.

As a part of the general considerations the author presents a chapter on Anesthesia in relation to surgical considerations which is explicit and of

value to both surgeon and anesthetist. Modern technique as developed by war experience has been incorporated and the entire book is well written as a text book for students and a reference for the experienced surgeon.

THE SURGICAL CLINICS OF NORTH AMERICA (Phila. Number, Feb., 1921). The Surgical Clinics of North America (issued serially, one number every other month), Vol. 1, No. 1. By Philadelphia Surgeons. Octavo of 259 pages, with 112 illustrations. Per Clinic Year (February to December). Paper, $12.00 net; cloth $16.00 net. Philadelphia and London. W. B. Saunders Company.

We have received the first two numbers of these clinics—No 1, the Philadelphia number. Number 2, the New York number, and they do unquestionably present the last word in the development of surgery.

The Philadelphia number is prepared by Philadelphia surgeons, and No. 2, the New York number, by New York surgeons. Each number contains approximately 300 pages, fully illustrated and material contributed by the recognized authorities on the subjects discussed.

To mention the names of some of the contributors is evidence of the real worth of this volume. From Philadelphia there is Drs. Ashhurst, Clark, Da Costa, Deaver, Frazier, Gibbon, Jopson, Keen, Muller, Nassau and Thomas. From New York, Drs. Erdmann, Meyer, Gibson, Johnson, Pool, Hartwell, Whipple, Albee, Buerger, Martin, St. John, Heyd and Stookey.

C. V. MOSBY COMPANY CATALOGUE. New and Standard Medical, Surgical Nursing, Dental Publications.

This general catalogue of this medical publishing house has been completely revised and rearranged so as to include the latest editions and newest works in medicine, surgery, dentistry, nursing and pharmacy they have published and is of real interest to any one who cares to know about the latest literature of these subjects. It is worth asking for. C. V. Mosby Company, St. Louis.

TUBERCULOSIS AND HOW TO COMBAT IT. A Book for the Patient. By Francis M. Pottenger, A.M., M.D., LL.D., F.A.C.P., Monrovia, Cal. 273 pages. Price $2.00. C. V. Mosby Company, St. Louis, Mo.

The author's first premise is that intelligence is the most potent factor that can be directed against disease and in managing a case of tuberculosis an intelligent understanding on the part of the patient is especially valuable.

The obvious purpose of this book is not to take the place of a physician but to help him by giving to the patient in clearly written printed form such information as the doctor is constantly preaching. Its purpose is to aid and supplement his instruction and make both his and his patients' task easier.

DISEASES OF CHILDREN. Designed for Students and Practitioners of Medicine, by Herman B. Sheffield, M.D., formerly instructor in Diseases of Children, New York Postgraduate Medical School and Hospital, and Medical Director Beth David Hospital, Consulting Physician to the Jewish Home for Convalescents and the East Side Clinic for Children. 798 pages; 238 illustrations; mostly original and nine color plates. Price $9.00 net. C. V. Cosby Company, St. Louis.

This book is divided into fourteen sections, and the classification of disease has been varied somewhat from that of older texts and in conformity to most recent conceptions of the causation of the diseases in question.

The normal anatomy and physiology are contrasted with the abnormal. Prominent symptoms which several diseases have in common are analyzed in relation to their pathogenesis and the different methods of physical diagnosis are elucidated and illustrated.

Some chapters that deserve especial mention are: Examination of Patient and Semeiology of Disease; Diseases of the Blood and Ductless Glands; Diseases of the Nervous System.

MEDICAL ELECTRICITY, ROENTGEN RAYS AND RADIUM, with a practical chapter on Phototherapy. By Sinclair Tousey, M.D., Consulting Surgeon to St. Bartholomew's Clinic, New York City. Third edition. Thor-

oughly revised and greatly enlarged. Octavo of 1,337 pages with 861 practical illustrations, 16 in colors. Philadelphia and London: W. B. Saunders Company, 1921. Cloth, $10.00 net.

Completely covering the field of electricity as a therapeutic agent. A combined text book for the student and hand book for the operator. The author begins with the most elemental considerations of the physics of electricity and its application and utilization in medicine. Then after thus laying a well defined foundation he continues his subject through to its present development and extensive application. He discusses fully and explicity Static electricity, Dynamic Electricity, physiological effects of electricity, electricity in diseases of the nervous system, electric sleep, electric death, high frequency currents phototherapy, electro-diagnosis, X-ray, radiography, fluoroscopy, technique for examining different conditions and different parts of body, roentgenotherapy in all is phases, and finally, radium, giving its characteristics, therapeutic application, etc.

The Significance of Group Practice.

In defense of group practice, Veader Newton Leonard, Duluth, Minn. (Journal A. M. A., Feb. 12, 1921), states that the conscientious specialist now finds himself confronted by precisely the same difficulties that harass the general practitioner in an attempt to obtain for his patient the best that medical science can offer. He finds himself constantly in need of expert opinions in other fields to correlate with his own; or he lacks the necessary experience to evaluate these reports properly. Unless the medical profession prepares itself to meet its just obligations in providing an efficient medical service within the means of the average patient, the practice of medicine as a private enterprise will be legislated out of existence. In order to meet its responsibilities in the ever increasing complexity of thorough medical work, the profession must reorganize itself into co-operative groups. The choice lies between this reorganization and some form of social medicine. Under any form of state or social medicine thus far devised, the practicing physician is degraded, medical efficiency drops to the lowest level, and the public is forced to accept a miserable quality of professional service. A co-operative group will succeed where the unaided individual must fail; it will meet its obligations to the patient and meet them efficiently; it will make contributions to medical sciences that could not be made otherwise; it will present a solid front to the political schemer or misguided enthusiast who would launch destructive legislation; it will insure its constituents a future of honorable service and adequate reward.

"Group Practice"—A Menace or a Blessing.

A most important innovation, commonly described as "Group Practice," has appeared in this country during the last two or three years. It was referred to incidentally by Dr. Billings in his discussion of "The Future of Private Medical Practice," in The Journal last week (February 5). This week we publish a plea for group medicine by Dr. Leonard, who is connected with a recently organized group (the Academy of Clinical Medicine) in Duluth. Groups under various names, such as clinics, academies, etc., are being organized over night, as it were, here, there and yonder, in towns of 10,000 or 15,000, as well as in the larger cities. The development of modern medicine, and especially of scientific laboratory diagnosis, may make necessary some such co-operative plan as these groups are intended to provide. Equipment, laboratory, roentgen ray and the like, which the average practitioner is not able to provide or to utilize satisfactorily, may thus be co-operatively provided. But what of the outcome of this new development? What of the physicians outside the group? Some evidently are seeing the advantages and are forming other groups—perhaps in some instances forced to do so in self-defense! Will not this mean group against group? May it not be one more step toward the complete elimination of the general practitioner—of the family adviser—of him who heretofore has reflected to the public the altruistic motives of the medical profession? Does it mean that the family physician is being replaced by a corporation? Will commercialism or professional altruism control the management of these corporations, or groups if they are not incorporated? In thinking over this matter it is important to

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look ahead and see what influence this new development may have on the public. How will the average layman view it? Will he not prefer state medicine? We are asking, not answering, the question—presenting but not attempting to solve the problem; for if we mistake not, it will prove to be a serious one.—Jour. A. M. A., Feb. 12, 1921.

The Culture of the Physician.

Just now the popular educational slogan is vocational education. "Train a child or a youth for the job he is to pursue in life" is the cry of the enthusiast, "to cook, sew, mold iron, lay brick or plan buildings." In colleges the same trend is apparent in the demand for productive scholarship. Admitting that the theory as applied to medicine will make better technicians, it should not be forgotten that it will also make for the influences of materialism. The things of the spirit, the beauty and ennobling effect of culture and refinement in the higher sense, will be lost. In our eagerness to know structure and function, normal and disturbed, of the body, we are likely to forget the whole man: an aspiring, feeling, beauty-loving creature with qualities that distinguish him as superior to the lower animals. Among physicians there have always been found men who eschew the finer things outside the pale of practical medicine, priding themselves on sticking "strictly to business." They frown on any departure from the narrow professional path. They do not see the flowers by the wayside. For them, lectures on literature, rat or philosophy have no interest. They gain little pleasure in seeing a great actor interpret Shakespeare, or in hearing good music. Rather, they boast of ignorance with regard to such matters, and let it be known that they have no time for these unpractical subjects. They do not realize that they lay themselves open to the suspicion of an underlying selfishness, a striving after the tradesman's goal of business and professional agrandibement. The well-rounded man is the one who appreciates the value of the cultural as well as the practical, and who lives a complete and satisfactory life—satisfactory not only to himself but also to his community.—Jour. A. M. A., Dec. 18, 1920.

Southern Medicine and Surgery

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TUBERCULOSIS OF THE KIDNEY.

By Robert C. Bryan, M.D., F.A.C.S.
Richmond, Va.

In the consideration of renal tuberculosis your writer will attempt to present the development of the kidney and follow its evolution, with the factors which influence its normality, to the time of the implantation of the tubercle bacilli.

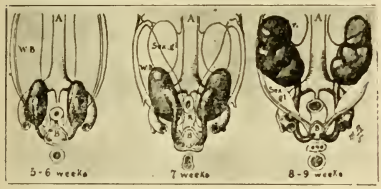

Fig. 1.

No. 1 shows the foetal position of the kidneys in the pelvis as they attempt to rise higher to gain ultimately their normal paravertebral beds. The lower poles at this time are quite close together, and the position of the pelves of the kidneys is antero-posterior so that gradual rotation must occur as they ascend to their ultimate normal position. That kidneys should be aberrant would be evident since the extra-peritoneal ascent, the constant influence of gravity and the unyielding abrupt bony pelvis all must be overcome before the organ reaches the uppermost limits of the abdominal cavity.

No. 2 shows the normal position of the kidneys of the adult. The relationship of the aorta and vena cava are well seen, likewise the relationship of the anterior surfaces of the kidney to the abdominal organs. It is interesting to note here that the antero-inferior pole of the right kidney is uncovered by peritoneum, which may explain the predisposition of this organ to pyelitis by the transmural migration of germs

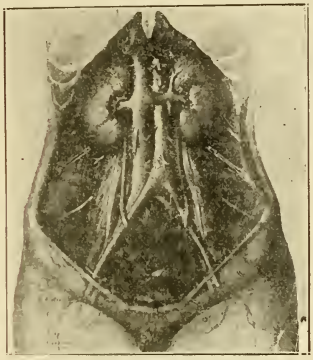

Fig. 2.

from the intestinal canal to its pelvis.

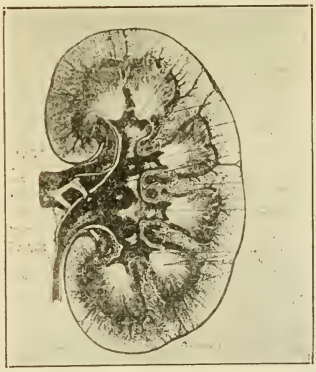

Fig. 3.

No. 3 is a sagittal section of the normal kidney in which the pyramids and medulla are well brought out and the relationship of the artery, vein and ureter are evident. A study of this normal pelvis emphasizes the outline of the usual pelvis as shown by the pyelo-

*Read before the Spartanburg meeting of the Tri-State Medical Association, Feb. 16-18, 1921.

gram. Attention would be called to the vascularization about the pyramids. The renal artery, which is 7 mm., radiates as a fan between the calyces to the sides of the pyramids until they reach the base, the arteriolae rectae being given off at right angles to further carry on the blood supply. It has been stated that 40 per cent of all kidneys have supernumerary arteries. The arteries perforating the capsule and coming through to establish a peripheral circulation may be well seen in No. 5. The figure at the left shows the perforating branch in the fatty capsule, the fat being removed. It is questionable if any organ in the body, not even the

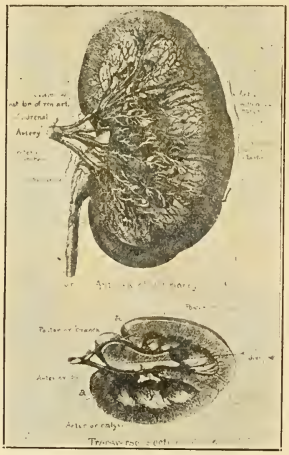

Fig. 4.

thyroid, receives a larger vascularization than the kidney; indeed nature has to slow down this tremendous blood current by sending off the renal artery at right angles from the abdominal aorta and again at the pelvis of the kidney is this stem broken up so as to reduce the velocity of the current. By the Ray-Conheim onkometer it has been established that there are three circulations of a given portion of blood every minute, and in a man weighing 75 kgm. there is in twenty-four hours a flow of blood through the vessels of 24,000 litres. Since the kidney is 1-200 of the body weight 122.5 litres flow through this organ every twenty-four hours. Other authorities have put the flow through the kidney at 590.1 litres per day.

No. 4 shows the circulation of the arteries throughout the kidney, and attention would be called to the lower figure, which illustrates that approximately two-thirds of the kidney's blood

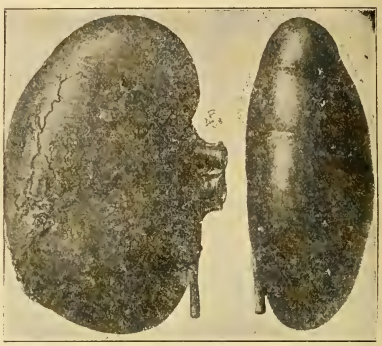

Fig. 5.

comes anterior to its pelvis and one-third posteriorly. The evident significance of this is in the posterior pyelotomy for the removal of stones or intrapelvic operations.

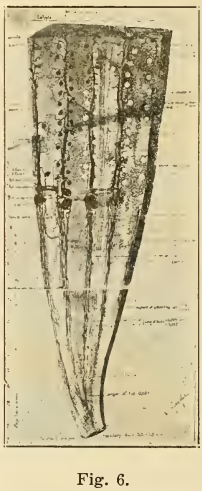

Fig. 6.

The venous system is relatively larger than the arterial as shown in No. 7. The renal veins have no valves but narrowing at the junction to reduce the

velocity of the blood current. Disproportion of the anterior pelvic and posterior pelvic flow is evident in the lower illustration of this corrosion preparation.

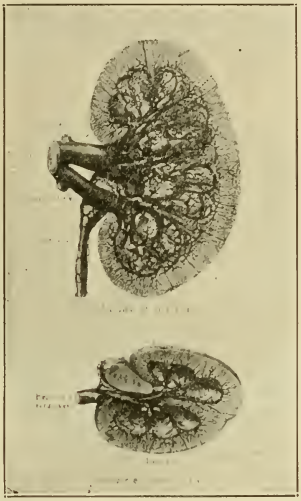

Fig. 7.

No. 6. A low power magnification of a wedge of kidney substance extending from papilla to surface. The arteries

Fig. 8.

are shown black, the veins gray. Four lobules are included.

The first lobule shows the principal of the vascularization; note the efferent branches of the lower glomeruli descending as arteriolae rectae verae. A papillary duct is 2 mm. in diameter.

The second lobule shows the entire tubular system of the medullary ray.

The third lobule shows two tubules in their entirety, beginning with the glomeruli and extending to the papillary duct. Note the different levels of the loops of Henle from the upper and lower glomeruli.

The last lobule shows the capillary system. Note the round meshes of the capillaries surrounding convoluted tubules and the elongated meshes surrounding the straight tubules in the center of the medullary ray.

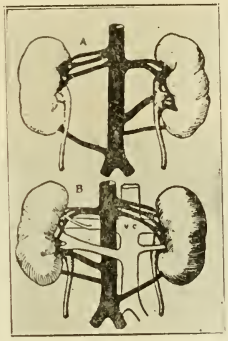

Fig. 9.

No. 9 illustrates anomalous blood supply to the kidneys and the influence of the aberrant aortic stem coming off and embarrassing the normal flow of the ureter, this is particularly evident from the lower illustration in this picture.

It is not the desire of the writer to draw too much upon possibilities but to emphasize at least the anatomical deviations which may be so exaggerated as to become pathological. Such a condition of affairs obtaining in No. 10, in which the aberrant stem to the lower pole has produced a marked hydronephrosis. If to this additional vascularization be added a failure of complete rotation of the pelvis, as illustrated in No. 11, hydronephrosis with its consequent stagnation, back pressure and flattening of the calyces, parenchymal congestion and pressure

necrosis are readily explained as a causative factor for implantation of the T. B.

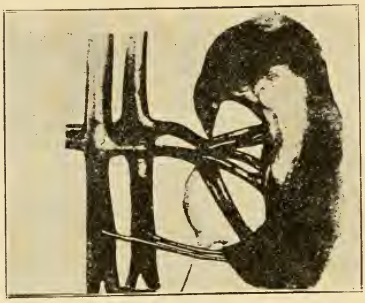

Fig. 10.

From the study of No. 13 it is shown that the influence of aberrant arteries would be more pronounced upon some pelves than upon some of the others.

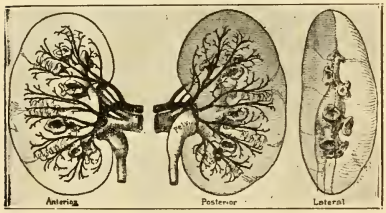

Fig. 11.

This likewise is further illustrated by No. 12, which shows anomalies of ureters and renal pelves. Above are cases where the ureter branches to form two separate pelves just before entering the kidney. In the next row, the division takes place further down, until both ureters are separate in their entire course; the vesical orifices are close together or further apart, the lower one even reaching the urethra. In the third and fourth rows the ureter branches outside the hilum at the point of dirst division into two, three, four, five and even six separate calyces, with or without the formation of a pelvis.

The etiology of tuberculosis of the kidney may be under the following heads: 1, hereditary; 2, trauma; 3, calculus; 4, mobility; 5, nephritis; 6, gonorrhoea; 7, infection; 8, malformation; 9, aberrant artery and vein, and 10, failure of complete rotation.

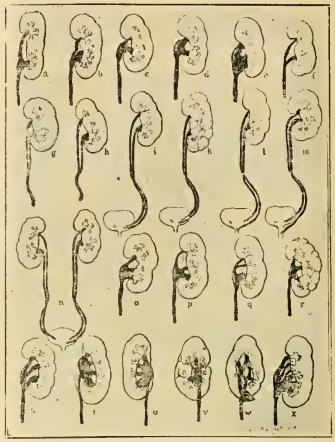

Fig. 12.

The routes by which the bacillus tuberculosis gain the kidney are: 1, blood; 2, lymph; 3, direct. Just here the writer would call attention to the lymphatic exchange of the epididymis, which ascending along with the spermatic cord meets at the ureteral ora the mural lymph flow of the ureter proper. The head of the epididymis, the vas deferens and the seminal vesi-

Fig. 13.

cles arise from the Wolfian duct and, therefore, have morphological bonds. It may be, therefore, that an initial renal tuberculosis gives its first evidence as a

tubercular epididymitis or vice versa, for the lymphatic draining of the testicle proper is into the retro-peritoneal lymph glands of the pelvis and is separate and distinct from the lymphatic drainage of the epididymis. The lymph flow furthermore is always from the kidney and not toward it, so that establishment of renal tuberculosis by this

Fig. 14.

means is apparently a negligible factor. There may be at times a direct infection of the kidney from some surrounding viscus, such as Pott's disease, tubercular lesions of the lung, pleura, liver or intestines, but the fatty bed surrounding the kidney and the dense kid-

Fig. 15.

ney capsule would seem to be sufficient barriers to prevent such a tubercular implantation. The blood, therefore, is the reasonable conclusion for kidney contaminations.

There have been a few cases on record where primary tuberculosis of the kidney have been found, it is usually secondary to a primary focus in the lungs or some other organ, the resistance of the kidney being reduced by the constant insults of the tubercular germs being thrown off in large quantities and finally succumbing to the tubercular process, for it has been established that the bacillus of tuberculosis may pass through a normal kidney without damaging the organ. Ultimately, however, by virtue of some slight congestion the tubercle bacilli is arrested in the glomeruli and Bowman's capsule and tubules, and although the convoluted tubules have a broadened stream, and the epithelial cells lining it are probably phagocytic, repeated insults are sufficient to produce the ultimate arrest of the T. B. The first pathological response is one of cell pro-

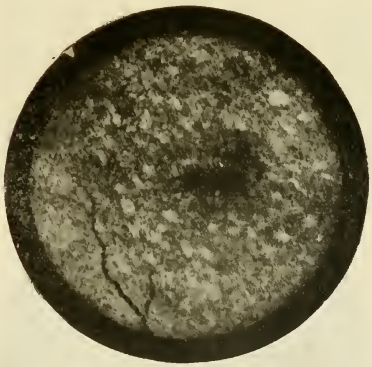

Fig. 16.

liferation, fatty degeneration, caseation and liquefaction and breaking through of these products from a papilla into a calyx; neighboring papillae becoming involved and remote parts of the kidney thus infected by the lymph channels in the tubules, showing further cortical involvement and subcapsular studding with milliary spots. Kumita, Sakata and Sugimura have demonstrated in the fatty capsule of the kidney two intercommunicating plexus of lymph channels which in turn connect with a lymph plexus just beneath the true capsule. Lymph channels from the parenchyma

drain into the lymph plexus just beneath the true capsule and from that may communicate with those of the fatty capsule. Undoubtedly the intertubular lymph spaces play an important part in spreading infection between pel-

Fig. 17.

vis and cortex. With these spaces invaded, infection of the greater lymph spaces of the cortex is easily accomplished. By this means tubercle bacilli may be distributed along the cortex to portions of the kidney remote from the primary lesion; but since the lymph channels of the separate portions of a

Fig. 18.

double kidney and of fused kidneys intercommunicate, cortical invasion of the second kidney may also be expected. When a tubule starts in the tissues around the blood vessels there is a distinct degeneration of the epithelial structures and the kidney lining near by, and not infrequently a marked round cell infiltration of the surrounding tissues. In addition to formation of distinct tubules with giant epithelial or lymphoid cells there is also frequently a diffuse tuberculous process showing a marked focal interstitial nephritis. Numerous experiments show injection of tuberculins repeatedly carried out in large doses produce parenchymatous degeneration of the kidney cells. With the arrest of the tubercle bacilli in the glomeruli some escape and are voided. Observers are undetermined whether endothelial or epithelial cell proliferation is the first response to the tubercle bacilli, but it is pathologically known that tissue destruc-

Fig. 19.

tion begins in the center as a result of the action of the protection of the products of the tubercle bacilli. The first change is fat formation of the cells near the center, with the subsequent death and disintegration of the fatty cells and it is by this means and spreading along the course of the tubules that it finally breaks into a calyx either at its tip or along the side of a papilla. E. Kehorn has shown that once developed all calyces become involved later, but the urine may remain clear for several days until the breaking through and running down of these tubercles into a lower calyx of the renal pelvis, with the purulent products which are attached thereto, finally fills up this lower calyx to overflowing, so it is at this time that urinalysis gives a large number of tubercle bacilli on examination.

Diagnosis—The early incipient renal tuberculosis is at times most difficult to diagnose. It has been stated that hematuria occurs 40 per cent macroscopically and 100 per cent microscopically. This hematuria varies in amount and in intensity; at times it is alarmingly great and at other times only a trace of blood can be found by the microscope. The urine is acid, of a low specific gravity, and pus cells are found in 98 per cent of all cases. The act of urination is frequently carried out on account of the large amount of water which the patient drinks, for the patient has found out from experience that dilution of the urine by drinking large amounts of water makes the pain

Fig. 20.

less. By the dilution of the irritating toxins, the mucosa of the bladder is not so excoriated, and although there may be a considerable loss of weight and lack of desire for food the patient continues to drink large amounts of water daily.

Pain. The pain is at times severe in character, indefinitely located in the back, or about the sacral region and in marked cases of bladder involvement there is the constant retropubic pain, considerably aggravated by distension of the bladder, and which is likewise well brought out by rectal examination.

At this time the urine may be negative for tubercle bacilli, it more usually is, but there is constantly an acidity of the urine with the presence of either pus or red blood cells. At this stage of the early infection, with the pouring in constantly of the tubercle bacilli over

Fig. 21.

the mucosa of the bladder from the ureteral mouth we find about this opening the unmistakable early evidences of tuberculosis as is shown in pictures 14, 15 and 16. In 14 the early vascular arborization is seen. In 15 the condition is more marked with ulceration, and in 16 there is a corona of tubercules about the ureteral orifice. No. 17

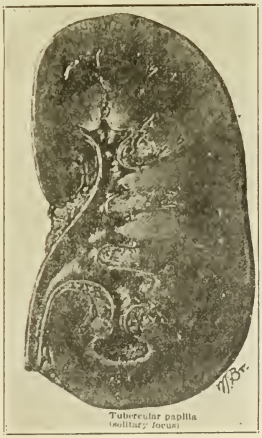

Fig. 22.

shows a bullus edema, which the writer associates only with tuberculosis of the

kidney, and which is a later stage than the foregoing pictures (14, 15 and 16).

Fig. 23.

It may be noted at the time of the cystoscopic investigation that the capacity

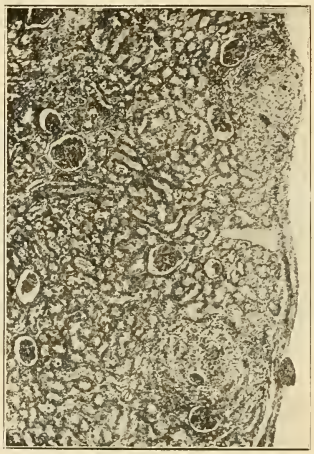

Fig. 24.

of the bladder is restricted, the fundus and vault apparently are normal and this early involvement of the mucosa of the bladder about the ureteral os is noted essentially on the side of the kidney involvement. Later on in the disease the ureter becomes thickened and with this thickening there is a retraction of its bladder opening producing the "golf hole" appearance, which has been referred to by Harry Fenwick. The "tobacco pouch" os is another phenomenon which is likewise observed, and which some urologists predict is associated only with tuberculosis of the lower calyces.

The renal function test in the early stages may be slightly increased due to the consequent congestion and irritation of the kidney, later on, however, with replacement fibrosis it is diminished.

Fig. 25.

The kidney efficiency may be further supplemented by phloridzin (temporary glycosuria) chromocystoscopy, or estimation of the urea secretion.

Pyelography, preferably with sodium bromide, 20 per cent solution, shows one or all of the essential features in tuberculosis of the kidney: 1, dilatation of the pelvis; 2, areas of cortical necrosis; 3, stricture of the ureter. Nos. 19 and 20 illustrate particularly well stricture of the ureter. In those cases in which tubercular bacilli cannot be found in the urine, but which shows constant acidity, pus or blood cells with history of frequent and painful urina-

tion, the cystoscopic and ureteral findings, are highly suggestive of early renal tuberculosis. One may try one of the following reactions, Von Pirquet (skin), Calmette (conjunctiva), guinea-pig injection or culture to find the tubercular bacilli.

No. 22 shows extensive cortical tuberculosis of the upper pole of the kidney. It is in such instances as this, that the pyelogram assists in diagnosis, the urinalysis and other examinations having been negative no satisfactory conclusion could have been obtained without the staining of the kidney. The writer does not believe it is ever desirable to do a pyeolography unless there are distinct indications for the same, and of the many preparations Thorium, silver salts and sodiumbromide the latter is the less damaging and irritating to the kidney pelvis.

Treatment—Treatment resolves itself into medical and surgical. The medical is dietetic, hygienic and vaccination. The treatment of renal tuberculosis is the treatment of tuberculosis in another part of the body plus the benefit of local applications to the mucosa of the urinary tract. We have had the opportunity to use Von Ruck's vaccines in several instances with apparently happy results. The surgical treatment should be directed to the kidney, for irrigations, installations and applications to the mucosa of the bladder and ureter can never be effective so long as there are irritating products of a tubercular process above constantly pouring downward. No. 22 illustrates a solitary tubercular papilla and further illustrates how this calyx may be filled up with the products of the tubercular involvement until it overflows down the ureter.

No. 23 shows a further involvement of the kidney, foci now being established in the cortex, and involvement of the ureter and stricture formation is the upper part of the tube.

No. 24 shows subcapsular lesions in apparently normal renal tissues removed from a single primary nodule in the base of a pyramid in the opposite pole. These two are from a series. Note that they take origin independently of the glomeruli and are just beneath the capsule.

No. 25 shows section of kidney from papilla to surface. Note wide extent of tubercular process which in this case is of the nodular fibrous variety. In contradistinction to the type shown in the preceding figure there is marked cortical involvement. The large nodules result from a confluence of tubercles. Note typical tuberculous structures as indicated by giant cells. There is still considerable renal tissue present, both glomeruli and tubules. The amount of sclerosis due to fibrous tissue formation varies widely according to the case.

When on investigation the condition has been traced to one side and definitely located there, nephrectomy is indicated if the fellow kidney is proven to be fully efficient to carry on the work of the body. It is surprising how the bladder lesion heals when the irritating products of the kidney above are removed. At the time of the operation the ureter should be tied off doubly, the stump well seared with carbolic acid and alcohol, and great care taken about contamination of the tissues in the removal of the kidney and ureter for infection of the wound means prolonged convalescence and constant care. More recently a method of drainage has been brought out by the Mayos to prevent contamination of the wound, the distal end of the stump being tied off with a very long catgut ligature which is threaded through a piece of long rubber tubing. This tube is then slipped down over the ligature and stump of the ureter and brought out of the wound so that the products from the ureteral stump drain through the tube to the outer world and consequently do not infect the surrounding tissues. Likewise applications may be made through this tube upon the stump of the ureter without coming in contact with the wound.

In conclusion the writer would express his thanks to Kelley & Burman's "Diseases of the Kidneys, Ureters and Bladder," Guiteras' "Urology" and Braasch's "Pyelography," which have been liberally abstracted, at times verbatim, and all illustrations that have been used in this series have been taken from these books.

Discussion.

Dr. A. J. Crowell, Charlotte, N. C.:

I would like to emphasize the importance of an early diagnosis in tuberculosis of the kidney and report a case as an illustration of its importance. When

any case of cystitis does not clear up under the usual treatment within two or three weeks at most, call it tuberculosis until it is proven otherwise. We all treat acute cystitis without a very thorough investigation very frequently, but when the symptoms do not subside in a reasonable length of time we should proceed to eliminate the different causes of cystitis until we ascertain what is back of the case in question.

The case I wish to use as an illustration of the importance of an early diagnosis of tuberculosis of the kidney is the case of a young man about 21 years of age. He came to us suffering with hematuria and frequency of urination which had extended over a period of eighteen months. The symptoms had subsided from time to time during this period but the patient was never entirely free from suffering. He had been under the care of a very competent physician but for some reason they had neglected ureteral catheterization and careful investigation as to the cause of the cystitis and intermittent hematuria. He was bleeding right profusely when he came under our care and his cystitis was quite marked. Ureteral catheterization was accomplished without difficulty and the phthalein output from the right kidney was 15 per cent in the same length of time. There was a great many more pus cells coming from the right than from the left kidney. Pyelogram show some hydronephrosis and ureterogram a greatly dilated ureter. Tubercle bacilli were found in the urine coming from each kidney. There were numerous cocci and bacilli other than tubercle bacilli in the urine from the right kidney.

This is a case in which the patient had gone too long before a diagnosis was made to get best results from operative procedure. In fact, it is inadvisable to remove one kidney when both are affected with tuberculosis, as a rule. Evidently the process began in the right kidney and extended to the left. Had the condition been discovered before the left kidney became involved the right could have been removed and in all probability the patient cured. There was no evidence of tuberculosis in any other part of the body.

We are treating this patient on the expectant plan and irrigating the pelvis of the right kidney with various antiseptic solutions with the view of getting rid of the mixed infection. Of course, we are very cautious not to produce trauma since this would be conducive to the spread of the disease.

Dr. Stuart Michaux, Richmond, Va.:

I would like to ask Dr. Bryan two questions:

First, does he rely upon the abnormal ureteral orifice as pathognomonic of tuberculous kidney. Personally, I have seen an occasional ureter which was apparently normal at the orifice throwing down tubercle bacilli. I believe the authorities almost invariably state that there is some engorgement of the orifice where infection of the kidney exists.

Second, Dr. Bryan alluded to the treatment of tuberculous kidney when the condition is bilateral or when nephrectomy is contra-indicated. I would like to ask what experience he has had with mercurochrome for kidney lavage. The drug has been put before us with the highest praise, and we have been led to believe that there is some virtue in it. Personally, I have been a little disappointed.

I also wish to take this opportunity to thank Dr. Bryan for presenting such an interesting and scientific paper.

Dr. Robt. C. Bryan, Richmond, Va.:

In reply to Dr. Michaux's question, I would say that although tubercle bacilli may go through the kidneys for some time without lodging there or giving rise to a tuberculous lesion, sooner or later there is an arrest of these germs with the establishment of a tuberculous process. I personally believe the primary lodgement is always in the kidney, the ureter and bladder infections being invariably secondary to the kidney above.

You will recall that the ureter is not unlike the intestine—working all the time and further stimulated to overwork by the irritating toxins of the tuberculous process above.

I consider the pain of a full bladder due to the violent peristaltic wave of the ureter pumping into an already overfilled bladder, and that the pain is not due to the insensate bladder wall being distended. The duty of this organ is to get distended and evacuate itself.

I have never used mercurochrome for tuberculous conditions. I have used it for other conditions; mercurochrome 1-1000 for pyelitis, cystitis and ureteritis. I would hesitate to use it in an active tuberculous state.

I think when the diagnosis has been established of a tuberculous kidney and it is known that the fellow kidney is doing the work of the body, that one should not wait too long to remove the infected organ.

One word about pus in the urine. Pus does not occur in all cases of pyelitis and we should have a specimen of the urine examined after careful centrifuging, and if we find organisms, then we should look further into the urological tract for trouble.

I think the day is coming when physicians are going to recognize more and more the necessity of a thorough urinalysis, especially of stained smears.

I think that in all cases of pyelitis and in all cases of ureteral calculi the patient should be tested to find out whether there is a stricture in the ureter or not.

PRIMARY CLOSURE OF THE URETER AND RENAL PELVIS WHEN OPERATING FOR STONES.

By LeGrand Guerry, M.D., Columbia, S. C.

My attention was first forcefully directed to the question under consideration by a splendid paper in the Louisville Monthly Journal of Medicine and Surgery, by Abell. The paper was published some time in 1907 and demonstrated conclusively, to my way of thinking, that primary closure of the ureter and renal pelvis, when removing stones, was surely the operation of choice in properly selected cases: notice, please, the expression, properly selected cases. Unless this qualifying phrase is borne in mind, confusion as to our position will certainly arise.

Urologists, by greatly improved methods of technique and equally improved instruments, are able to remove the majority of stones from the lower end of the ureter without an operation. Certainly, within reasonable limits, this method should be given a fair and reasonable trial.

We must also remember that a large percentage of all stones in the ureter are passed voluntarily by the patient without any operative aid and this paper concerns itself solely with the group of cases in which, for one reason or another, operation is deemed best.

In a very extensive review of the literature on this question, during the last ten years, it was quite surprising to find how frequently and how very successfully the methods of primary closure has been and is now, practiced. For example, we find Israel, Albarran, Jeanbrau, Tuffier, Cabot, Crile, Young, Mayo, Judd, Murphy, Kelly, and many others, practice primary closure.

We can think of no reason why, when the individual case is carefully studied, the ureter should not be closed immediately. Of course there are cases in which it would be bad surgery to attempt immediate suture, the point being that the grounds for closing in one case and not closing in another case, are fairly obvious and easy to ascertain.

Judd, in a personal communication, says: "I feel confident that I have closed the ureter in fifty cases and have never known any difficulty to arise from it. In a few instances, there was drainage of urine in spite of closure, although in a large percentage, the wound has healed practically by first intention."

The ureter is a patent tube with dependent drainage naturally all of the way from kidney to bladder, the very best possible kind of drainage, and the simple presence of a stone does not constitute, within itself, any sufficient reason for drainage. Take for example, a perforating wound of the intestine; we know that such a wound is infected and yet, while we may drain the abdominal cavity, one would hardly attempt to drain from the site of each individual perforation..

Given then a stone in the lower ureter, all reasonable efforts should be made to remove the stone without open operation. There are, however, fairly definite and clear limitations to the amount of effort which should be made to remove the stone through the cystoscope.

In a paper by Judd, read before the

* Read before the Spartanburg meeting of the Tri-State Medical Association, February 16-18, 1921.

Southern Surgical Association, December, 1919 and published in the Annals of Surgery, February, 1920, page 129, he gives the following contra-indications by Braasch, as to efforts to dislodge stones:

(1) A stone 2 cm. or more in diameter.

(2) Ossification with continuous obstruction.

(3 Acute renal infection.

(4) The patient's intolerance to cystoscopic manipulation.

(5) Anatomic deformity.

If the renal infection is severe, intra-ureteral methods should not be attempted and operation should be undertaken with the idea that it may be necessary to remove the kidney. These contra-indications, while they are known to all of you, have added emphasis by the weight of this authority sanction.

One must ever bear in mind what may happen from the continuous pressure exerted on the kidney by obstruction of the ureter and that it is quite possible to have from this cause a permanent hydro-nephrosis or pyelo-nephrosis.

Face to face then, with a given case, in which the open operation has been decided on, there are four primary reasons, the presence of any one of which, constitutes sufficient reason for drainage as against primary closure:

1. A stricture of the ureter of such caliber and density as seriously to encroach upon the size of the ureter. In my experience, however, this is a very rare condition and at the present time, amongst urologists, is a question of lively debate.

2. The presence of extensive infection. This condition constitutes a real contra-indication and is one which we do meet with occasionally.

3. Inaccessibility of the field of operation. Unless the field of operation can be rendered accessible and brought within ready control of the surgeon, it is quite difficult, if not impossible at times, to practice immediate closure.

4. At times the patient's condition may be so serious as to make inadvisable anything but the minimum of manipulation. Personally, I have had one case in which the patient was in coma from obstruction to both ureters by stones. The stones were removed under local anesthesia; no suture of ureter was attempted; drains placed to the site of each operative field; and the patient died within thirty-six hours in uraemic coma.

Such then, and very briefly, are the reasons for drainage and non closure; the same grounds apply with equal force to stones in the renal pelvis. Conversely then, in the absence of the above stated contraindications, our position is: that the ureter and renal pelvis should be closed primarily.

One will find, I believe, when fairly considered, that with the great majority of stones in the ureter and a good percentage of those in the kidney pelvis, primary closure is a safe, sane and sound surgical practice, thoroughly consistent with the underlying principles of pathology.

Those who do not subscribe to the position of primary closure, maintain that the mortality is just as low and that the patients will recover just as well as if suturing was immediate and this, in a very real sense, is quite true. We insist, however, with all of the emphasis at our command, that convalescence is shortened; the mortality rate is just as low.

When the question of the patient's comfort is considered, there is a very great difference, don't you think, between the patient on the one hand, with a perfectly dry, comfortable wound and on the other hand, a case lying in bed with a cold urine soaked dressing, lasting anywhere from one to six weeks. The mortality rate in the primary closure being just as low as in the cases which are drained.

In all of this discussion, we must remember that the open operation for removal of ureteral and kidney stones has an exceedingly low mortality rate and the very best end results.

So much for the argument. Now for the facts based on our personal experience, for, after all, we are not nearly so much interested in maintaining a certain position as we are to adding our personal experience to the primary closure side of the question. The facts are as follows: We have practiced primary closure in a series of nineteen cases, not a very large series, still quite sufficient to be suggestive. Of the nineteen cases, eleven were men and eight women.

Twelve times we have closed the ureter and seven times the renal pelvis. Of the twelve cases in which the ureter was primarily closed, there was one case in which the suture came out and the ureter leaked just as much and just as long, as if it had never been sutured. The basic fault here being one of surgical judgment, rather than one of method, for we did violence to the rule of reason, as pointed out in contra-indication two and three. The patient was a very stout male in which there was marked infection around the stone and the field of operation was so inaccessible as to make closure very difficult.

Good judgment in this case would have dictated, not closure, but drainage. In one other case in this group there was escape for four or five days of a very small amount of urine, about twenty per cent of what would have escaped had closure not been made.

We have then in this group of twelve ureteral cases one complete failure, one 20 per cent failure, and ten cases in which the wound healed by complete primary union. Surely a result worth while and pregnant with food for thought.

In the group of stones in the renal pelvis, there are eight cases, six of these healed by complete primary union and two cases, while they showed some leaking, were a marked improvement over the method of non-suture, since both of them leaked very little and closed within a week.

The method of technique and the things to be considered in a purely operative way are to be shown in the latern demonstration.

Discussion.

Dr. G. T. Tyler, Greenville, S. C.:

I want to bear testimony to the ability of the kidney-pelvis to recover from injury inflicted during the removal of a stone. In one case, I opened the pelvis at its lower boundary. The stone could be felt with an instrument; but could not be grasped. After several attempts I had to go through the kidney to remove it. In the manipulation, I tore the pelvis from the kidney through one-half of its attachment. Because of this injury, I debated whether the kidney should be removed. Owing to its good appearance, I decided to repair the damage by suture. This was done, the suture-line reinforced by the peri-renal fat, and the kidney replaced. The excellent function of that kidney at present attests the healing.

I am still of that group who feel they must drain. I place a cigarette drain down to the kidney, and remove it in twenty-four to forty-eight hours. I feel that I am playing safe, though I quite agree that it may not be necessary.

THE SURGICAL TREATMENT OF CERTAIN TYPES OF DYSPEPSIA*

By Stuart McGuire, M.D., Richmond, Va.

A generation ago the physician held undisputed sway in the treatment of digestive disturbances and the suggestion that dyspepsia could be cured by surgery, when medical, dietetic and hygienic measures had failed, would have been regarded as an absurdity. It is now accepted that indigestion when chronic or recurrent is almost invariably caused by organic changes in the stomach, duodenum, gall bladder or appendix, and that relief from symptoms in such cases can only be permanently secured by the surgical correction of the anatomical lesion.

Every one suffers at times from indigestion due to imprudence in eating, but no one has constant persistent dyspepsia lasting for months or years unless it be due to some organic disease. A case of indigestion ought not to be subjected to surgery until it has been carefully and properly treated by medical measures without success, but every case that fails to secure relief in a reasonable time should be examined to see if there is not some indication for operative intervention.

In investigating a patient it should be remembered that while the symptoms may be due to disease of the stomach itself, they may also be due to reflex irritation from disease of some other abdominal organ. It is a fact that in nine out of ten cases the lesion is not in the stomach but in some associated viscus such as the duodenum, gall bladder or appendix. In other

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words, while the symptoms are gastric and the treatment surgical, the operation required is not necessarily on the stomach.

Obstruction of the pylorus may be organic such as results from the cicatricial contraction of an ulcer, or spasmodic such as results from reflex nervous irritation due to appendicitis, cholecystitis or duodenal ulcer. The first is mechanical and should be relieved by making a new exit for the stomach contents, the second is functional and should be relieved by diagnosticating and correcting the cause which produced it.

At one time it was thought that the operation of gastroenterostomy was a panacea for all gastric disorders. It was found, however, that while in some cases it accomplished brilliant cures, in others it not only did not relieve but actually increased the patient's distress.

A gastroenterostomy will cure the symptoms due to an organic obstruction of the pylorus because it relieves the condition by affording a new exit for the stomach contents. It will not cure but will aggravate the symptoms due to spasmodic obstruction because it overcomes the protective effort on the part of nature to prevent the passage of irritating gastric contents into the intestinal tract.

The most common operations for the relief of dyspepsia due to organic diseases of the stomach are partial gastrectomy, pyloroplasty and gastroenterostomy.

Partial gastrectomy is the operation done for ulcer or carcinoma of the pyloric end of the stomach. It originated as a pylorectomy with anastomosis of the cut end of the duodenum into upper angle of the gastric incision, it was then changed by Billroth to complete closure of the stomach with a posterior gastrojejunostomy, and finally it has been perfected by Mayo, who recently introduced the method known as the modified anterior Polya operation. This operation can be done with low mortality on suitable cases, and gives admirable results. Patients with ulcer of the pyloric end of the stomach are relieved of all symptoms and restored to complete health. Patients with cancer of the stomach have their life prolonged, and in the 306 cases reported by the Mayo clinic, over 37 per cent of the patients have remained well at the end of a three-year period. This is a most satisfactory showing for the surgical relief of an otherwise hopeless condition, and even better results may be expected when cases are diagnosed earlier and referred to the surgeon more promptly.

Pyloroplasty is the operation done on the pylorus for the excision of an ulcer or the relief of obstruction due to nonmalignant disease. The operation at first consisted of an incision through the wall of the pylorus in a line parallel with its long axis and the closure of the incision at right angle to the direction in which it was originally made, thus widening the pyloric opening and relieving the narrowing. This operation has been modified by Finney, Horseley and others so as to make it more effective and applicable to a larger number of cases. Pyloroplasty is an ideal operation both from an anatomical and physiological standpoint, but it is also ideal in the sense it can rarely be satisfactorily performed. In 72 per cent of patients according to Deaver the ulcers are located so far from the pylorus that the method is not applicable, and in cases of long standing the walls of the pylorus are so thick and inelastic that the tissues cannot be approximated in the desired position without producing a deformity which interferes with the motility of the stomach, stitches often cut out when tension is made on them, and the suture line is insecure and there is danger of leakage.

Gastroenterostomy is the operation most frequently done for benign obstruction of the pylorus and for duodenal ulcers. It consists of an anastomosis between the stomach and a loop of the jejunum, thus establishing a new opening through which the contents of the stomach can reach the intestinal tract. The effect of the operation on the stomach is both mechanical and chemical. Mechanically it permits the gastric contents to pass readily into the intestines as the new opening between the stomach and jejunum relieves any obstruction that may have existed at the pylorus. Chemically it lowers the acidity of the gastric contents, as the stomach also permits the alkaline secretions of the liver and pancreas to pass into the stomach. Thus gastric dilatation and food stagnation

are cured by drainage, and hyperacidity of the stomach is relieved by neutralization of the acid with the patient's own alkali.

How a simple gastroenterostomy cures a duodenal ulcer is a theoretical question. It is a practical fact that it does cure. While gastric ulcers frequently lead to cancer, duodenal ulcers do not undergo malignant changes. There is therefore no reason to excise them unless they are causing hemorrhage.

If this be the case and the ulcer is accessible it may be wise to destroy it with a cautery.. Balfour noted the fact that a peptic ulcer which perforated always healed if the patient lived. An analogous condition can be created by burning through the bowel over the center of an ulcer with a pointed cautery and then suturing the opening and protecting the wound with a tag of mesentery or omentum. The objections offered to the operation of gastroenterostomy are that sometimes food escapes too quickly from the stomach causing bowel disturbances, that occasionally bile and pancreatic secretion enter the stomach in large quantities causing nausea and vomiting or the so-called vicious circle, and finally that in a few cases an ulcer develops in the jejunum at or near the anastomosis due to the irritation of a mucous surface which has no natural immunity to the action of gastric juices. This complication can be made infrequent by placing the opening at the bottom of the stomach so there will be no retention, and by using catgut instead of silk or linen so there will be no unabsorbed sutures.

While the operation of gastroenterostomy requires explanation and apology, still in properly selected cases it gives good results and will continue to be frequently employed by the best surgeons the world over until some better method is devised. The operation has been much abused. By its friends who in their enthusiasm perform it on unsuitable cases and by its critics who offer no satisfactory substitute for it. Say what you please, it has given relief to many patients and will be the stepping stone to future progress.

The most frequent operations for the relief of dyspepsia not due to organic diseases of the stomach are those done for appendicitis, cholecystitis, duodenal ulcer or other diseases which interfere with digestion by causing a spasm of the pylorus. Pylorospasm is not a disease but a symptom. To endeavor to circumvent it by a gastroenterostomy will do harm and not good. The source of the reflex irritation which causes the spasm must be found and relieved. If it be cholecystitis the gall bladder should be removed. If it be pancreatitis the gall bladder should be drained either externally by a cholecystostomy or internally by a cholecystenterostomy. If it be appendicitis, then the appendix should be taken out, but the surgeon should be sure that no other diseased condition is left in.

The unsatisfactory results which sometimes follow operations for the cure of dyspepsia may be classed under four heads:

1—Failure of the diagnostician to recognize the true cause of the symptoms:

It is a generally accepted truth that successful treatment must be based on a correct diagnosis, and in no line of work does this apply more forcibly than in the surgical cure of dyepepsia. Every possible means should be employed before operation to determine the pathological condition that causes the symptoms, but when the abdomen is opened a thorough and complete examination should be made of all the various organs. The obvious cause is not always the real cause of indigestion. A provisional diagnosis of gall bladder disease may apparently be confirmed by finding the presence of gall stones and yet the actual trouble may be really in the appendix. Here the removal of the gall stones will do little good unless the appendix is also taken out.

A more frequent cause of failure is to remove a chronically inflamed appendix and leave other diseased conditions uncorrected. This is especially liable to occur when an appendectomy is done through a small split muscle incision. Except in children and in acute cases of appendicitis in adults an appendectomy should be done through a mid right rectus incision which gives sufficient room to completely explore the abdomen and which by extension up or down will permit the correction of

any diseased condition found in the pelvis or upper abdominal region.

2—Failure of the operator to apply the proper technique to meet the indications:

The pathological changes found in the abdomen vary so greatly that great wisdom is often necessary to deal with them properly. A standard method to meet different indications has not been adopted and much is left to the theoretical views or the practical experince of the individual operator. Errors of judgment are frequently made by two classes of surgeons and many patients are made worse and not better by unnecessary or illogical abdominal operations. These surgeons are those who are untrained and those who although experienced are prejudiced for or against certain procedures. In former days untrained surgeons were barred from work by high mortality. The modern technique, which is easily acquired, has removed this obstacle and they now operate without loss of life but frequently without relief of symptoms. Well known and experienced surgeons are sometimes so biased by their personal views that they do a pyloroplasty when a gastroenterostomy would be better, or drain a gall bladder which should be removed, or remove a gall bladder which should be drained. All this will be corrected in time. Untrained surgeons will learn by experience or be restricted by law, and dogmatic surgeons prejudiced by the part they have taken in evolving certain operations, will die and be replaced by men with open minds, who will impartially weigh all the evidence and adopt the true and discard the false teachings of the past.

3—Failure of surgery up to the present time to develop a satisfactory operation to correct certain conditions.

Surgery of the stomach and associated viscera is comparatively new. Much has been done but much remains to be accomplished. Only a generation ago the causative relation of appendicitis and other diseases to dyspepsia was not recognized, Murphy's button was generally employed as the accepted method of forming an anastomosis and the X-ray had not come into use as a diagnostic agent. So a generation hence many of the views and methods of today will doubtless be obsolete and will be replaced by theories and practices which will give better results. Many of the operations now employed by the best surgeons will be abandoned and new operations will be devised to correct defects which we already recognize but do not know how to overcome, or to accomplish results which we now desire but do not know how to secure.

4—Failure of the physician to properly direct and supervise the patient's post hospital treatment.

A surgical operation performed on a patient suffering from chronic or recurrent dyspepsia is but the first step in his cure. The operation simply removes the cause of his symptoms and the case must be carefully and judiciously treated for a long time before he can be said to be well. Frequently the difference between success and failure depends on the post operative and post hospital management.

After a partial gastrectomy the size of the stomach is reduced and food has to be given in small quantities and at more frequent intervals than normally. If before operation there is complete achlohydria there is no hope that acid production will ever be re-established and its lack must be supplied artificially by medication.

After a gastroenterostomy the stomach empties more rapidly and frequently contains bile and pancreatic fluid which enter through the anastomotic opening. This requires a careful regulation of the diet and occasionally the use of gastric lavage until the stomach acquires a tolerance.

After an operation on the duodenum, gall bladder or appendix to remove the cause of pylorospasm the patient must be systematically treated until the hypersensitiveness of the pyloric muscle is relieved and the spasm habit is overcome.

The post operative treatment of patients is carried out during their convalescence at the hospital under the supervision of the surgeon. The post hospital treatment is continued after their return home under the direction of their family physician.

While at the hospital the patient should be impressed with the fact that he is not well because his wound has healed and that it will be necessary for him to be prudent until sufficient time

elapses for his organs to accommodate themselves to new conditions and for his weight, strength and nervous equilibrium to be restored. On his return home he should be directed to place his case in the hands of his family doctor who should be fully informed as to the nature of the operation that had been done and given suggestions if any special indication existed for treatment.

Only by cordial co-operation between surgeon and physician can the best results be secured for these patients.

THE TREATMENT OF VARICOCELE WITH A REPORT OF THREE HUNDRED CASES.

J. Richard Allison, Columbia, S. C.

The war has stimulated a renewed interest in the operation for varicocele, an operation which up to that time had practically been discarded by many surgeons, and by all only performed in extreme cases. During the war the surgeons in the army and navy found that undoubtedly many of their men were rendered unfit for service by the presence of varicocele. It is admitted that many of the symptoms were partly and often entirely subjective, but in the majority ample pathological basis for the symptoms were found which necessitated surgical interference, and thereby disapproving the generally accepted theory that the fundamental cause of varicocele is a sexual neurosis. The remarkable point about the condition is, that though the cure involves only a simple minor operation, the literature is overcrowded with methods which vary from the very simple to the comparatively complicated. The various operations for the cure of varicocele in number are similar to the drugs recommended for the cure of asthma. Much has been written that is unnecessary and the only excuse for this addition is the hope that it may help to simplify the operation by giving a clear and simple discussion, first as to the necessity of the operation, second, the anatomical relations to be considered, third, an outline of the various methods in vogue, and fourth, to advocate a simple operation that is not new, but is believed to be the most successful as a routine measure.

The question as to the necessity of the operation cannot be decided by any arbitrary rule to be followed in all cases. Examination of the varicocele alone is not sufficient. The smallest ones may give the greatest discomfort, and the largest be practically free from discomfort. When the varicocele is present and even granting the symptoms to be partly subjective the operation should be performed depending upon the discomfort experienced by the patient. It was not our policy to advocate operation in all cases. A definite history was obtained as to the duration, amount of discomfort experienced, this taken in consideration with the size and length of the varicocele was the basis on which we formulated our policy of treatment. Many patients from whom we were able to elicit symptoms of sexual neurosis were not operated on, given palliative treatment. It is acknowledged that many of the cases under normal conditions of life would never have come to operation but the majority would have continued with a measure of disability and discomfort proportionally greater than the discomfort resulting from the operation. From my observations it seems reasonable to conclude that there is a definite type of large varicocele with redundant scrotum that always requires surgical interference. The excuse for such operations is as valid as for hemorrhoids or any other varicosed condition that resists palliative treatment. Neither is it more logical to recommend the continued wearing of a support for these cases than it is to advocate the wearing of a truss for hernia, a method of treatment long since discarded in good practice.

In determining the best method for the operation and cure of varicocele, too much stress cannot be laid on the anatomical structure of the parts concerned. Many of the operations seem to be based on an erroneous idea as to the cause of varicocele and the changes necessary to bring about a cure. Varicocele as the name implies is a varicosed condition of the pampiniform plexus of veins which form the bulk of the cord. These veins are divided into three groups. The anterior contains the spermatic artery, the middle the

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vas deferens, and the posterior much smaller consists of a plexus of veins passing upwards from the tail of the epididimus. The anterior group is the larger and the one that is first affected, or if the dilitation affects all the veins, is most extensively involved. The causes of varicocele generally accepted and as given in a standard text book on anatomy are:

1. The relative length and course of the veins.

2. The lax tissue surrounding them so that (as with the long saphenous vein) they derive little support and their blood current receives no aid from the presence or contraction of surrounding muscle tissue.

3. Their large size as compared with the corresponding artery, so that the visatergo must be reduced to a minimum.

4. Their tortuosity, frequent anastomosis and few and imperfect valves.

5. The pressure exerted upon them as they pass through the inguinal canal not altogether unlike that experienced by the hemorrhoidal veins in their passage through the walls of the rectum.

Further cause of varicocele is shown by the greater frequency on the left side. In three hundred operations and the examination of many others I have found not more than a half a dozen right sided varicoceles. So the following reasons given for the greater frequency on the left side should at the same time be considered real primary causes:

1. The veins in the left cord are much larger than those in the right.

2. The left testicle hangs lower than the right, so that the column of blood in the left veins is longer.

3. The left spermatic vein is longer than the right and enters the renal vein at right angle.

4. The left spermatic vein running behind the sigmoid is constantly subjected to pressure from accumulation of feces in the bowel.

The coverings of the cord from within outward are the infundibliform fascia a distinct layer continued from the transversalis fascia; cremasteric fascia consisting of muscle fibres prolonged from the internal oblique and the transversalis blended together by connective tissue and spreading over the testicle; intercolumnar fascia a delicate sheath derived from the aponeurosis of the external oblique at the margin of the external ring, also invests the testicle. In addition we have the skin with the superficial and deep layer of the superficial fascia. The deep layer of the latter is very important as it is continuous with the fascia on the abdomen, invests the testicle and joins with colles fascia in the perineum. The anatomical structure has been given in detail in order to show the fallacy of many of the operations to be mentioned, and to show that any operation which divides the skin and coverings of the cord, either by removing a portion, or sewing them up transversely, or both, will shorten the cord and at the same time suspend the testicle. With this point in view we will now consider the main points in the various operations advocated for the cure of varicocele.

The standard text book operation makes no mention of the coverings or an attempt to shorten the cord. As performed by the average operator not only the veins but a mass of tissue is ligated in one mass, the two ends tied together and the wound closed. A certain amount of shortening of the cord and suspension of the testicle is attained in this way, but the operation is followed by complications such as painful mass at the site of the incision, atrophy of the testicle and hydrocele. To prevent such complications as hydrocele some operators have endeavored to perform the operation without disturbing the vas. Such an operation is described by Angwin. It consists simply of ligating a few of the veins at the external ring without disturbing the other structures of the cord, and is probably just as successful as many of the elaborate ones. Del Valle attempts to shorten the cord by causing the veins to pass over a bridge of tissue formed by the aponeurosis of the external oblique. Franks operation is raising a flap of the external oblique and suturing it to the gubernaculum testis. Meeker attempts to suspend the testicle by shortening the cremaster muscle and fascia, and only ligates a few of the veins in selected cases. The Narath operation is the most elaborate of all. He splits the aponeurosis of the external oblique muscle, ligates the veins as high up in the inguinal canal as possible, sutures the internal oblique to pou-

parts ligament and the distal end of the veins to the muscle as high as possible. Turner makes a longitudinal incision through all the structures including the coverings of the cord, and after ligating the veins sews up the coverings in a transverse direction. Does not tie the ends of the ligated veins together. Except for this latter point it would seem that this operation is the best of the different ones advocated.

The following method was employed in the three hundred cases operated on in the Naval Hospital, New York: The patient was prepared the night before as for any major operation by scrubbing with green soap, washing with alcohol and a sterile dressing applied. General anaesthesia always used. The scrotum and surrounding parts painted with iodine and immediately washed off with alcohol. The varicocele and cord grasped between the thumb and fingers, the vas palpated and allowed to escape. While the assistant holds this mass so that the scrotal tissue is firm and tense over the mass of veins a longitudinal incision is made for a distance of two or three inches. As many layers over the veins are divided with the knife as considered safe, each being caught immediately with fine hemostates. To entirely expose the veins a pair of pointed scissors may be used until the veins are entirely free from all the coverings of the cord. Grasping the veins between the fingers, the assistant releasing his hold, they are separated for a distance of three inches to the head of the epididymis. A ligature is passed about one inch from the head of the epididymis, and three inches above this point and both tied, and the intervening mass cut away. The ends of the ligatures are left long. One end threaded on a needle and passed just behind the ligated mass. The two ends are then approximated accurately by means of the ligatures, one on the top and one on the bottom. The coverings of the cord with the skin and fascia are sewed up transversely. Where indicated on account of redundant scrotal tissue a portion of one or both may be resected before the wound is finally closed. A collodian dressing applied, and a suspensory that is fastened both above and below to insure the proper support. The dressing is removed on the third day, the wound cleaned with alcohol and dressed with aristol powder. The success of the operation naturally depends on the thoroughness of each point mentioned. Even though this is a minor operation it is not suitable for local anaesthesia, for we are dealing with a mass of loose and redundant tissue that is rendered more susceptible to infection by the oedema and infiltration caused by local anaesthsia. Adequate preparation as described is essential, for it is true that infection is more frequent in the low operation than the high unless such precautions are taken. It is important to wash off the iodine immediately, if you use it at all, for it will cause a distinct oedema and inflammation of the scrotum which often prevents primary union. The point about getting the veins entirely free from all the other structures is the most important of the whole operation. Such failure is, I believe, the cause of the very high percentage of complications reported by many competent surgeons. When the veins are once grasp-end between the fingers for further separation it is important to hold on to them firmly, once they are allowed to slip back into the wound, the whole process of freeing them from the coverings must be repeated or the whole mass ligated as is often the case. Many will object to this method of suspension of the testicle and shortening of the cord, but the detailed description of the anatomy and the various operations described here, show that the cord can be shortened by removing a section of the coverings and sewing them up transversely. In resection of the scrotum which is advocated here where we have a redundant scrotum we must remember that it has a very ample blood supply and heals with very little scar formation. I have often been agreeably surprised at the cosmetic results after considerable resection of the scrotum and the apparently disfiguring scar at the time of the operation.

Finally in any operative procedure conservative technique should always have precedence over mutilating ones. Undoubtedly the low operation as described is a simple and conservative method for the radical cure of varicocele. I firmly believe that the reason we have so many operations described is because this first and simple method has not been carried out with due at-

tention to each step that is necessary. Where hernia is present the high operation is the one of choice but it is not necessary to make a hernia operation when only the cure of a varicocele is sought. The complications from the three hundred operations were four hydroceles that required subsequent operation. Atrophy of the testicle, the most serious of all, did not occur in this series. Bloodgood reports 30 per cent hydrocele and atrophy of testicle 15 per cent. This is about the average percentage as reported by the different authors. A comparison of these statistics should speak well for the method described in this paper.

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LESIONS OF THE FEMALE URETHRA AS A CAUSE OF URINARY DISTURBANCE.*

W. B. Lyles, M.D., Spartanburg, S. C.

The scope of this paper is an endeavor to describe briefly and accurately lesions of the female urethra as a cause of urinary distress. This condition is so common and yet so frequentlyy overlooked by the general medical man, that I feel fully justified in presenting the subject.

Many so-called cystitis, irritable bladders and neuroses are daily receiving blind treatment for want of a definite pathology. This may be attributed not so much to the individual worker as to his failure to examine every case cysto-urethroscopically regardless of clinical symptoms and laboratory findings.

In reviewing my records of urological cases, I am impressed with the large per cent of women who complain of urinary symptoms with no other pathology than that of the urethral tract. In women as well as in men, the urethra harbors many strains of bacteria. These organisms, non-pathogenic may become pathogenic under favorable influences. Therefore, many cases of urethral inflammations are due to causes other than venereal and urethral discharges other than to the gonococcus. While it may be difficult to demonstrate organisms in the discharge, either by smear or culture in the presence of inflammation, bacteria must be present.

Chronic urithritis and its sequellae is by far the most frequent lesion encountered. It matters not whether the etiology is the aftermath of an old Neisser infection, or a mixed affair; whether it be a staphylococci, streptococci or colon infection, the symptomatology is practically the same. In either case the symptoms vary from one of discomfort to that of distress, depending upon the intensity of the lesion. Hematuria may be slight or profuse and may be alarming to the patient. Frequent and painful urination, throbbing along the urthral tract, sense of fullness or weight in groins or at vaginal outlet. Hesitancy, partial or a complete retention or a slight incontinence. The chief point, however, to bear in mind is that from the history alone, a positive diagnosis cannot be made.

Our analysis of symptoms in most cases point no farther than to indicate that we are dealing with a lesion somewhere in the urinary tract. To locate this lesion, to determine its character and to outline its best form of treatment, we are necessarily dependent in the majority of cases on modern methods of urological diagnosis. This is best accomplished by means of the endoscope which serves not only as a diagnostic, but a therapeutic agent as well. To the trained observer, the various lesions that account for symptoms will at once be recognized. These vary from small inflammatory areas to granular patches, erosions, small ulcerations and fissures in prolonged untreated cases. Ultimately connective tissue changes with contraction and stricture formation; not infrequently, caruncle as a

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result of strain and prolonged inflammatory process.

Erosions and ulcerations occurring at or within the external meatus may represent a chancre or a chancroidal infection or be confused with a tuberculous ulcer. In most instances the initial lesion will be excluded by a diligent search with the ark field lamp, a failure of which to be followed by repeated Wassermans until a diagnosis is positively established. A tuberculous ulcer is usually associated with a renal or vesical tuberculosis and will be determined by the presence of the tubercular bacilli.

If we are to attain any degree of success in the treatment, the etiological factor must be clearly established. In each individual case it is important to determine the source of infection; whether it be primarily in the genital or urinary tract, or one of focal infection. In either event these foci should be located and removed when practical.

In lesions from an old chronic urithritisa, topical treatment directed to the urethra through the straight tube endoscope will be found satisfactory in the majority of cases. The patient is required to void immediately before placed upon the table. Strict asepsis is observed in regard to the toilet. The endoscope is introduced carefully back to the vesical neck. With the Kelly evacuator all residual urine is withdrawn and the entire tract dried with a dry cotton applicator. Silver nitrate 3 per cent—10 per cent or as strong as 20 per cent is applied directly to the effected areas by means of a sterile cotton swab. This is repeated twice a week, or once in ten days, depending upon the extent of the lesion and tolerance of the patient. It has been the practice of the writer to inject into the urethra by means of a bulb female urethral syringe of the Becton Dixon type, half an ounce of a 5 per cent Argyrol following the application of silver. The patient is requested to retain the Argyrol as long as she can comfortably do so. The object of this is two-fold. First, Argyrol exerts a sedative effect to the mucous membrane after silver. and second, the parts are given the benefit of a germicidal agent for an hour or longer.

Acriflavine 1-5000 irrigation or an injection of mercuro chrome 1 per cent once a day will be adequate in selected cases. The urethral crypts and glands must be looked upon as a source of recrudescence, especially Skenes glands situated one on either side of the urethra just within the external meatus. These glands invariably act as autoinfectious sources and may be responsible for the recurrent cases who may come back after many weeks discharged as cured.

Infections Skenes ducts are best treated by the instillation of one-half per cent to 1 per cent silver nitrate sol by means of a 55 cc. Luer syringe with a blunt pointed needle. Ducts or crypts further back in the urethra can be given similar treatment with the Guerahty utricle syringe with a special devised tip.

The time honored sound so universally employed in treatment of the male has an unappreciated usefulness in the treatment of the female urethra. Results obtained from a gradual dilatation with the sound or straight Kolhman dilator in the deep infiltrating type of urithritis is decidedly beneficial..

Alternating with the endoscopic and previously mentioned germicidal agents.

Conclusions.

1. Lesions of the female urethra are a great factor in distressful micturition among women than is generally recognized.

2. Special urological methods are essential both in diagnosis and treatment. Unless these methods are employed, satisfactory treatment cannot be instituted.

3. In search for the etiological source focal infection should not be disregarded.

4. The sound and Kohlman dilator has an equal field of usefulness in the treatment of the female urethra as it has in the male and should be more universally employed.

Discussion.

Dr. M. H. Wyman, Columbia, S. C.:

I am sorry I missed the first part of Dr. Lyles' paper. Dr. Lyles has suggested the treatment of the female urethra compared with the treatment of the male urethra. The female urethra has been neglected except by a few gynecologists. I am pretty sure that many female gonorrohea cases are not

cured because the urethra is neglected.

In my practice of urology I have occasionally given special attention to the female urethra, but not with the systematic attention I have given to the male urethra, and I think this is a good subject to bring to our attention, and is well presented by Dr. Lyles. A little conical female urethra dilator is used by Dr. Kelly which answers the purpose very well. It is well to use it before introducing the cystoscope, thus decreasing the pain very much by relaxing the urinary sphincter.

MECKEL'S DIVERTICULUM — REPORT OF SIX CASES*

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The following cases having a Meckel's Diverticulum have been observed:

Case 1—C. H., male, age 28, was admitted to St. Luke's Hospital, New York City, on April 20, 1915, complaining of right inguinal hernia. His history was entirely negative except for the presence of the hernia of six years' duration. Physical examination was negative except the right inguinal hernia of the indirect variety extending into the scrotum. The sac was readily separated and its contents found to be irreducible, it was therefore opened. Small intestine was adherent to the bottom of the sac, the bowel was delivered by separating these adhesions and found to be the blind end of a diverticulum, traction on which brought down a loop of ileum. This diverticulum arose from the gut on the side opposite the mesentery. It measured four inches in length and its diameter was that of the small intestine. The diverticulum was amputated and the hernia repaired. The patient's recovery was uneventful.

Case 2—M. S., age 29, male, was admitted to St. Luke's Hospital, New York City, on May 5, 1915, complaining of chronic indigestion. This patient was an Italian and his history difficult to obtain. For four years he had had colicky pain in the region of his umbilicus, anorexia, flatulence and constipation. He had not had an attack suggestive of acute abdominal disease. His appendix had been removed through a McBurney incision six months before admission but he was not improved by the operation. The abdomen was opened by Dr. Mathews through a high right rectus incision. There were no adhesions and all the viscera were normal except a diverticulum arising from the ileum located 18 inches from the ileocecal valve. The diverticulum was about the size of the last joint of the thumb measuring one inch by one-half inch. This was removed. The patient made an uneventful recovery, was relieved of his symptoms and gained weight during his convalescence in the hospital.

Case 3—W. C. S., male, age 9, was admitted to St. Luke's Hospital, Richmond, Va., February 13, 1917, complaining of severe abdominal pain. He had had frequent attacks of mild abdominal pain attributed to food. The present attack began four days before admission with severe colicky pain over the entire abdomen, nausea, vomiting and constipation. His physician gave him several enemas resulting finally in a good bowel movement. Enemas given during the past two days, however, have been without result. His severe pain became localized in the left lower abdomen but there was some pain in the epigastrium. The abdomen was distended and rigid, the right rectus muscle was particularly rigid. Leucocyte count was 21,500, polymorphonuclears 73 per cent, lymphocytes 27 per cent. The abdomen was opened by Dr. McGuire through a right rectus incision. A diverticulum was found about four inches long, gangrenous at its tip. It arose from the small intestine and was adherent to the mesentery forming a complete obstruction to the bowel. The patient was in such poor condition that the abdomen was closed without further exploration. He made a good recovery.

Case 4—M. Z., female, age 43, was admitted to St. Luke's Hospital, Richmond, Va., January 11, 1920, complaining of indigestion and abdominal pain. She had an attack five years before in which she had cramp like abdominal pain, fever, nausea and vomiting lasting five days and diagnosed appendicitis. She has had recurrences of similar but milder attacks which have become more frequent during the past few months. During the period in which

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she has had these attacks she has had no appetite and has suffered with flatulence. Her bowels have always moved regularly. She has not lost weight. The abdomen was opened by Dr. McGuire in the mid line and an adherent appendix removed. A diverticulum was found coming off the lower ileum and showed evidence of having been inflamed. It was removed. The patient made an uneventful recovery and when seen six months later her symptoms had been relieved.

Case 5—T. W., female, age 42, was admitted to St. Luke's Hospital, Richmond, Va., April 29, 1920, complaining of irritation of the bladder. This patient had a chronic pelvic infection and in the course of the operation a small diverticulum was discovered arising from the lower ileum and removed. There were no symptoms which could be referred to it.

Case 6—W. R., male, age 9, was admitted to St. Luke's Hospital, Richmond, Va., on Jan. 23, 1921, complaining of abdominal cramps and locked bowel. He was a healthy strong boy who had never had any serious illness. His mother recalled frequent attacks of abdominal cramps of short duration attributed to over eating. Three days before admission he had a sharp cramp extending over the entire abdomen. The next day the pain was more severe and he vomited several times. Numerous cathartics and enemas failed to move his bowels. When he arrived at the hospital he was seriously ill. The abdomen was slightly distended, very rigid over the lower half, and a rounded mass was felt in the left lower quadrant. This mass could also be felt above the brim of the pelvis by rectal examination. An enema was given with no result. The abdomen was opened by Dr. McGuire in the mid line and a diverticulum was found twisted on itself and involving in the twist a loop of ileum, all of which was gangrenous. The loop of bowel containing the diverticulum was resected and an end-to-end anastomosis done. The diverticulum was distended, measuring six inches in length and two inches in its greatest diameter. The patient died 24 hours later.

The standard text books on anatomy and the papers written on this subject give the incidence of Meckel's Diverticulum as 2 per cent of all individuals. Balfour (1) reported that it was discovered only 15 times in 10,600 abdominal operations at the Mayo Clinic or 0.14 per cent. That it is seen in so much smaller numbers on the operating table is easily explained for few operators examine the small intestine and unless the diverticulum is diseased it is not casually discovered.

The diverticulum is the remains of the vitelline duct of the embryo and in post natal life is located on the terminal four feet of the ileum usually about 18 inches from the ileocecal valve. The wall of the diverticulum is the wall of the lower ileum and the mucosa and submucosa contain the usual glands and lymphoid tissue of this gut. Wellington (2) collected 326 cases reported up to 1913 and found that one-third are attached to the navel either as an open fistula or by a fibrous band. The length varies from one-half to nine inches. Its blood supply is received through an extension of the mesentery along its border. In Wellington's collection of cases the following conditions in order of frequency were found: intestinal obstruction, intussusception, acute diverticulitis, in hernial sacs, opening at the umbilicus, volvulus, perforation in typhoid, perforation from foreign bodies, and tumors. The inflammatory cases formed only 15 per cent of this number. This is due to its large caliber providing easy drainage of its contents and being attached to mobile gut it is less liable to stoppage and its resulting infection than its neighbor the appendix.

Fauntleroy (3) reported the case of a young seaman who was seized with sudden severe abdominal pain simulating acute appendicitis, operation was done in less than 24 hours and an intussesception found with a Meckel's Diverticulum at its head.

Pearce (4) reported a case of acute diverticulitis gangrenous and perforated when the operation was performed, 12 hours after the onset of symptoms.

Bennett (5) reported the case of a young girl with intestinal obstruction due to a Meckel's Diverticulum adherent to the omentum, thus forming an arch through which four feet of ileum had twisted.

Harbin (6) reported two children having diverticula opening at the umbilicus. He also reported a woman in

whom a diverticulum was discovered in the course of a pelvic operation, she had had vague digestive symptoms for years.

Frasier (7) reported a young man who had frequent mild colicky pains, at operation the appendix was normal but search revealed an inflamed and adherent Meckel's diverticulum.

Borden (8) reported a remarkable case in which the diverticulum had tied a knot around a loop of bowel and the whole mass was gangrenous.

These cases are quoted to illustrate the pathological possibilities. It is easy to imagine the obstructive potentialities of a finger of gut which may be adherent to the umbilicus, omentum or mesentery, or free to twist and tie itself around the neighboring loops of gut. Halstead (9) says that this diverticulum is responsible for 6 per cent of all intestinal obstruction.

The symptoms arising from such varied pathology are not constant enough to permit of accurate diagnosis. In the past histories of cases 2, 3, 4, and 6, frequent attacks of colicky pain was noted and in Case 2 the pain persisted after removal of the appendix. In general, the inflammatory cases simulate appdendicitis, Case 3 was thought to have peritonitis on account of the distention, tenderness and rigidity on the left side. The obstructed cases give the picture of a low obstruction where the distention is only moderate and the vomiting not profuse but although the symptoms are not so alarming as a higher obstruction the danger of gangrene of the gut is just as great. Wellington's (2) collection of 326 cases showed a mortality of 57 per cent of all cases.

That it can be a source of irritation to the stomach in the so-called surgical indigestion the author is convinced. Harbin's (6) case and Cases 2 and 4 above are illustrations.

A positive diagnosis of the condition cannot be made until the abdomen is opened except in the rare cases where the diverticulum is open at the umbilicus. At operation if the pathology is acute it is easily discovered but in any case a short search along the terminal four feet of ileum would find or exclude it. If found even though it be not diseased it should be taken out in the same manner that the appendix is routinely removed when the abdomen is opened.

Comment.

The cases herewith reported may be summarized as follows: Cases 1 and 5 presented no symptoms referable to the diverticulum, it was removed in the course of operation for other trouble. Cases 2 and 4 had recurring attacks of pain which can be attributed to disease of the diverticulum and in addition digestive symptoms which were relieved by removal of the diverticulum. Cases 3 and 6 were acutely ill with obstruction of the bowel, both had had numerous previous attacks of abdominal cramps which can be explained by the presence of the diverticulum.

This series of cases illustrates several interesting conditions which may result from the diverticulum. The two cases which had acute disease were seriously ill and the above mentioned mortality of 57 per cent of all cases is most impressive. I am particularly interested in the two cases which were relieved of chronic indigestion by removal of the diverticulum and believe that every exploratory laparotomy should include an examination of the lower ileum for the diverticulum particularly when other findings are not conclusive.

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CONDITIONS SIMULATING DUODENAL ULCER*

By Henry Norris, M.D., F.A.C.S.
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While an ordinary typical duodenal ulcer can almost invariably be diagnosed upon the history alone, if carefully taken, without the aid of X-rays, gastric analysis or even physical examination; cases are not infrequently encountered in which all the laboratory aids are of value and in which one's powers of differential diagnosis may be taxed to the utmost. It is to this group that I wish to call your attention.

A typical gall bladder disease may closely resemble ulcer in many symptoms and it must be borne in mind that both conditions may be present, but in ulcer the history of periodic distress is usually of longer duration and the patients are more apt to appear to be in a state of normal health, this coupled with the location of pain or discomfort, relation to ingestion of food and the characteristic remissions, are significant points in the diagnosis of these two purely surgical lesions. Nausea and vomiting of frequent occurrence in gall bladder disease are rare in duodenal ulcer. In my experience gall bladder troubles, except infections following typhoid or appendicitis, are not common in true blonds. Gallstones are much more frequently found in fat, flabby persons while ulcer is seen in well nourished individuals with firm musculature and a moderate amount of fat.

Duodenal ulcer is said to be four or five times more common in men than in women and I am inclined to make the percentage even higher. In one doubtful case of a woman referred to our hospital for operation for gallstones, I made a positive diagnosis of ulcer, proven by operation; the deciding factors were, that in addition to being a wife and mother, she had done the work of a man, and used tobacco and corn whiskey.

Adhesions in the right upper quadrant of the abdomen may give rise to much indecision in differential diagnosis; the picture of gall bladder disease, ulcer, either gastric or duodenal is not clear and we have all operated upon patients where a positive diagnosis could not be made until the abdomen was opened. Faithful medical treatment, followed by relapses with return of all the old symptoms are surely our justification for what may be called diagnostic laparotomies. In those cases which show light adhesions between the gall bladder and transverse colon, or between the latter and the pylorus with an unduly movable and large duodenum, I believe a disease entity exists which has not yet been given a name.

A high appendix may give rise to rather suspicious symptoms and in about ninety per cent of ulcers a chronically diseased appendix can be demonstrated, but if it exists alone the remissions and periodicity are lacking whilst the localizing distress remains.

Vagatonic symptoms are found in thin poorly nourished subjects with a low blood pressure and usually there is present in varying degree a ptosis of some or all of the abdominal viscera. These patients never look really well and in taking their histories it is difficult to note the many variations of symptoms of which they complain. They are never free from discomfort of some sort, even if they are given a rest cure.

Ulcer cannot be diagnosed upon pain alone, hence every known aid must be employed in doubtful cases where it is impossible to elicit a typical history, and no method of examination should be neglected. It is inexcusable to operate upon a case of Tabes Dorsalis, or cardiac disease with abdominal symptoms.

Not long ago I saw a patient, male, aged sixty years, who gave an almost typical history of gall bladder disease and who looked the part, but after a most complete and thorough examination, a diagnosis of Angina Pectoris with abdominal pain was made, which I believe to be correct.

According to my friend, Carlisle, mitral stenosis may closely simulate appendicitis with pylorospasm. Only last month I saw in consultation a case of mitral and tricuspid disease with a congested liver, exquisitely tender, which looked very much like an acute gall bladder.

Some years ago I very confidently opened up a patient for ulcer, who had given a typical history and much to my mortification I found everything in his

*Read before the Tri-State Medical Association at the Spartanburg meeting, Feb., 1921.

abdomen in wonderfully good condition for a man of his age, 65. Later, I discovered that he had been using morphine for years.

Subsequently, Pancoast of Philadelphia in the Journal of the A. M. A. reported eighteen cases of opium habitues on whom he had made a series of fluoroscopic examinations, all of which showed increased gastric peristalsis and alterations in the duodenal caps. So far as I am aware this phenomenon has not yet been explained.

SOME THOUGHTS SUGGESTIVE AS TO THE CARE AND TRAINING OF MENTAL DEFECTIVES*

C. Banks McNairy, M.D., Superintendent, Caswell Training School, Kinston, N. C.

In order that we may have some basis for our conclusions, we think it advisable to give some of the history relative to the care of this unfortunate class of the human family.

In the long ago mental defectives were recognized as objects of derision, aversion and persecution. The idiot inspired disgust and horror, as well as forfeiture of all human rights and privileges. Such unfortunates were permitted, or purposely so placed, to death perils in Sparta. The feeble-minded, sharing the fate of weakly children, were cast into the Eurotas.

A short time ago, an enthusiast wrote me a regular treatise on the cause and prevention of feeble-mindedness, claiming that it could be prevented by giving a special serum to the prospective mother. He closed with this question: "How much better are we who support the Chicago doctor than the ancients?"

We are told that traces of this custom are found in the laws of Lycurgus and was not confined to Sparta alone; that Cicero intimates its existence among the Romans and that it existed to a considerable extent in certain South Sea Islands and among a tribe of American Indians.

The question naturally arises, is this not nature's law, the survival of the fittest?

We are further told that where one escaped such a tragic end his fate was scarcely more desirable, that of being hedged about by ridicule and scorn for the sake of diversion and amusement.

We find it further stated that some escaped both and by chance filled exalted positions—Nero, Commodus and others.

Such were the ideas of cause and the methods and customs of treatment through the hundreds of years prior to the dawn of the coming of the great Galilean teacher and preacher and the dawn of Christianity. It is now believed by some that that great apostle and logician, St. Paul, had these unfortunates in mind when he said, "Comfort the feeble-minded."

Some 300 years later, Bishop of Myra was tenderly caring for the idiots and imbeciles. At times they were permitted to wander unmolested in Europe as in the Orient, being viewed with superstition and reverence, thought to have some mysterious connection with the unknown. The home that was fortunate enough to possess an idiot was considered especially blessed of God, that one of its number was privileged to walk in silence on the earth, but hold its conversation in heaven. It is said that in Brazil an imbecile in a family is a source of more joy than sorrow.

The American Indian considered them children of the great Spirit, and permitted them to go unmolested.

Confucius and Zoroaster enjoined a tender care of these unfortunates. The Koran gives special charge to the faithful, "Give not unto the feeble-minded the means which God hath given thee to keep for them, but maintain them for the same, clothe them and speak kindly unto them." This would not be a bad motto for today.

The first enactment of law which took recognition of their mentality and legal rights was during the reign of Edward II of England. Yet again the pendulum swings backward, always appearing as shadows in the brightest spots of human civilization. Superstition and persecution follow; even down to the reformation when Martin Luther and Calvin denounced them as being possessed of the devil.

Naturally many acts of individual kindness have passed unnoticed for ages, and we waited until the time of Ann of Austria when the first home or

*Read before the Tri-State Medical Association, Spartanburg, S. C., Feb. 16-17-18, 1921.

asylum for the homeless and outcast, the feeble alike in mind and body, was established.

About 75 years ago there was special notice taken of the feeble-minded in the United States. A school was established in Massachusetts and shortly afterwards one in Pennsylvania and in New York. From time to time up to the present, from year unto year, there has been born into existence a number of institutions, North Carolina waiting until 1911 when the Legislature made a special appropriation and we opened a school at Kinston July 1, 1914. Since that time we have had under our care and observation, from time to time, 340 children.

The care and training of the mental defective is an infinitely complex problem. It is different with each type according to age, sex, degree and kinds of defects. Then it may vary both physically and mentally.

Dr. Fernald says that he has found in many cases that a psychiatric or psychologic diagnosis was not sufficient. "The individual diagnosis, to be pragmatic, must take into account the bodily condition, heredity, home conditions and the whole environment, learning capacity, mental symptoms, social adaptability, economic status and earning capacity, character and personal traits, intelligence level, and other psychological ratings. The mere name of a disease does not get us very far. This is as true of the feeble-minded cases as of the frank psychoses and the various other phases of maladjustment."

X-ray every segment, analyze all the juices, look for every sign of abnormality or stigmata in physique, use every means of cunning laboratory apparatus and tests, and route them by means of antitoxins and other therapy—after all this scientific research and means of investigation, don't forget that the problem of diagnosing mental deficiency correctly is that you are dealing with a living individual with most complicated patterns of reaction.

If mental defectives have had such home care that includes the gamut of all known agencies for help, such as special class work; private school; change of teacher; let up school pressure; take out of school and send to work; change of work; treat as delinquent; special medical or surgical treatment; country life; travel; vocational training; adding new interests and recreation; placing in selected family; modifying home environment, etc., then there can be reached a working diagnosis.

For the idiot there is little that can be done. He should be segregated, as his appearance in the home or in public is repulsive and undesirable. There is nothing that can be done except to give him the best custodial care and amusement. The same might be said of the low grade imbecile.

The high grade imbecile, as we endeavor to classify them for our convenience, can be trained in such habits of conduct and manners, dress and speech, that will enable him to be as little offensive and repulsive to those with whom he lives, not forgetting the main object is to make his life most happy irrespective of its longevity.

It is in one form of this type—mongolian imbecility—that we think medicine and glandular extracts offer the best results; the symptoms of which are reduced stature, modified forms of hands, and peculiarity of features, especially of the eyes. This type is not believed to be due to inheritance.

In June it was my privilege to be the guest of Dr. George Mogridge of Glenwood, Iowa, who is superintendent of the Iowa School for Feeble-minded, and has been engaged in the work for thirty odd years.

Among the many courtesies shown me, he gave me the benefit of his years of experience and observation and his experiments, calling my special attention to this type of mongolian imbecility. One thing he stated that he observed years ago was that there were no family characteristics whatever or any favor or appearance that connected them to anyone save the common herd of human beings; that in his opinion what produces this type occurs in embryo before the special family traits or characteristics are established. At his suggestion, his assistant, Dr. Bell, had made some forty or more lithographs of the heads of mongolians, which he was kind enough to permit me to see, in which they were able to demonstrate the constrictions or compressions upon parts of, or the absence of, the anterior body of the pituitary gland.

They at some time since, probably some years, secured from Armour & Co. an extract. At that time there was no established dosage and nothing known as they could find in literature about its physiological effects or symptoms of an overdose.

As there is no recognized dosage of the anterior body of the pituitary extract, it is well to remember some of the physiological effects when pushed too fast—flushed cheeks, temperature, rapid pulse, dilated nares, quickened respiration; much the symptoms of acute lobar pneumonia. However, all disappear in twenty-four or forty-eight hours if the pituitary is discontinued.

Dr. Mogridge is a very modest gentleman and makes no claims. He simply stated what they had observed. His assistant gave me a bottle of tablets, whereupon they insisted that I make some experiments.

Coming home, I selected three mongolians in our institution. I have here some kodak pictures that were taken when we began the treatment of these mongolians, and others made a few days since. The improvement in the younger girls is noticeable, but we fail to see any evidence whatever in the older one. Of course, we are not in a position to draw any positive conclusions more than to say from our experiments, the younger the mongolian the more likelihood there is of improvement.

The two little girls came from different parts of the State; one from the extreme east and the other from the middle southern part of the State. They were both dull and uninterested. However, I am glad to say that now they are very active, learning to dance, and are seldom still when awake. They can be seen skipping, throwing balls and sometimes driving each other with lines, playing horse. They wave or halloo at me whenever or wherever they see me. I am confident that this treatment is worthy of a trial.

You will find on the same card the pictures of two cases of pellagra. One has been treated with Hormotone and the other with Thyroid Extract. Both have improved; all appearance of skin lesion has disappeared on both save the one treated with Hormotone still has the dark hemorrhagic spots on the back of hands.

The moron, the highest type, where we would naturally expect to find the most hope, is accompanied with the greatest obstacles and presents the most varied and myriad difficulties of solution. Here we have to deal with matters of self-control or inhibitions, we have much to learn along lines of training and control. The exact relation between temperament and intellect here has not been closely defined. The physiological chemistry of the internal secretions is still far from being well understood. The same is true of the psychology. However, we are aware that the internal secreting glands throw into the circulation specific substances that affect both the physiological and psychological development and chemistry of the human being, when properly functioning, producing harmonious actions and results in normal physical and mental development. When a loss of the equilibrium of secretion of either one or more of the ductless glands, there is undue activity or suppression, as in acromegaly and in mongolian idiocy, caused by over-functioning or under-functioning of the whole or parts of the pituitary gland that may be due to lack of development, compression or absence. Just to what extent or degree of the functioning of the internal secreting glands and the part they play in the physical as well as the mental make-up in the normal mind has not been fully determined. We are not able to diagnose or differentiate the activities or non-activities of the part played in the human economy of many of the glands as they affect the mental development or retardation of the unfortunate. Personally, we believe that many of the temperaments and mental diseases, probably best known as psychoneurosis, as well as that type of mental defectives who are subject to mental storms, are due largely to a loss of the equilibrium in the functioning of these internal secreting glands. Here is where the progressive, up-to-date physician has a great opportunity for study, observation and experiment, with quite a hope of reward.

In training the moron we must not forget that this type is hardest to control and most dangerous to society, propagating quite rapidly. They are often the objects of inherited ante-social and criminal tendencies. Dr. Charles B.

Davenport says that heredity has been traced back 200 years and there is little doubt in some cases if we had sufficient records we might go back 2,000 years, or even further, that many of our feeble-minded are a low type of mental development due largely to their ancestors.

We must ever keep in mind that the predominance, the interplay, the synchronization of heredity is predetermined for us; it is ruled by the chemistry of the individual being; his choices along temperamental lines are all fixed, deep written within him like hidden mines that should purposely be avoided, and we must accept and exercise a wise noninterference here. It is impossible to change one scintilla of the mud from which he is made. Like the potter who never attempts to change one iota of the chemicals which make up his clay, we must needs bear in mind the utter impossibility of making finished products without proper material.

In our notice to the public of the opening of our Institution July 1, 1914, I find that we stated: "One of the greatest objects of this institution is to segregate and thereby protect these girls;" another, "To make them as nearly self-supporting as may be possible;" and another, "To make them happy therein."

Our views are somewhat changed, or rather broadened, in all save the last, which we now believe should be first. We were as dogmatic in regard to our views and future plans for dealing with the problem as it affected the State at that time as we were ignorant.

In our report for 1917-18 we announced the following:

"The aim of the institution is to segregate, care for, train, and educate as their mentality will permit, the State's mental defectives; to disseminate knowledge concerning the extent and menace of mental deficiency; and to suggest and initiate methods for its control and ultimate eradication from our people, with the hope that an extension bureau may be created and a psychological clinic established, where all criminal defectives may be sent for study and observation, where proper estimates of their mentality may be made, expert advice as to their responsibility given, and the best methods of treatment suggested for their future happiness and development."

It will be observed that upon this depended the whole responsibility of the State's mental defectives, which is our present view is both an absurdity and an impossible dream. Our program now, as I shall endeavor to give you, is quite different.

Our program as mapped out for North Carolina's mental defectives is to have a home or colony that will furnish custodial care and training such as we have designated for the idiot and low grade imbecile. We have the plans for a home unit, which when completed will care for 1,000 pupils, in which we hope to establish a psychological and research department joinly with an educational or extension bureau. It is our purpose to diagnose and classify the high grade imbecile and moron, removing all physical abnormalities that is possible, and give such training, physically, intellectually, industrially and mechanically, that will give the most assurance for future happiness and sustenance. It is our further purpose, as soon as our financial conditions will permit, to erect three colonies, two on our estate and one in our city, to be used as stepping stones back to society, wherein we hope to relieve our overcrowded home colony, first putting them out on probation in the colonies, then in the city where we will still keep supervision and have them returned to the colony or home at night; and from here back into the several communities under the influence of better environment than from which they came, or to an environment that will understand them. Furthermore, it is our intention, when once our institution is in thorough running order, to assure ourselves by the process of asexualization or sterilization that our institution shall not be the source of its own perpetuation or used as a kindergarten or nursery for the children of our former pupils.

Original Communications

THE EARLIER RECOGNITION OF TABES DORSALIS*

By Edward J. Wood, M. D., Wilmington, N. C.

One of our most distinguished American neurologists (Starr) in his text book begins an account of the physical signs of locomotor ataxia by the sentence "The physical signs in the early stage are the loss of patellar tendon reflex, the loss of the pupil reflex to light, and a contraction of the pupil." When these things occur the diagnosis is superfluous and any benefit to accrue from it is so trifling that it need hardly be mentioned. The utilitarian at once asks why the diagnosis when nothing can be done to relieve the disease? Without granting that nothing can be done, for this is a debatable point yet to be settled, in spite of the prevailing pessimism it must be recalled just how much a poor tabetic is often made to suffer because his sensory symptoms unattended by the above-mentioned classical symptoms are falsely interpreted. My first interest in this matter was aroused by Fr. Muller in Munich. Well do I recall the gleeful manner in which he showed us a patient with a long abdominal scar from a surgical procedure done to discover the cause of obscure epigastric pain. It is needless to say that the surgeon did not discover the cause of the pain and the patient continued to suffer on. Gordon Holmes tells of a patient whose abdomen had been opened five times to determine the cause of epigastric pain which at last was shown to be due to the gastric crisis of tabes.

In one of the great London hospitals a student interested in the study of sensation in the normal and in various neurological conditions was startled to find that numerous cases of gastric classification responded to the finer and more delicate tests of tabes. In one case particularly the diagnosis was carcinoma and it was based on careful X-ray work by a very keen house physician. None of those classical symptoms recorded above by Starr had occurred but sensory investigation proved to the satisfaction of any modern neurologist that the patient had early tabes and his gastric distress was due simply to gastric crisis. In the same ward at the same time was a man labeled ulcer of the stomach. He was receiving the full Sippy diet. Again, his neurological picture presented none of the symptoms counted early by Starr but a study of his sensation proved conclusively that gastric crisis was the cause of the pain. The important point apparently overlooked in this case was the fact that the occurrence of pain was in no way associated in time with the taking of food. Another patient of this group had a diagnosis of aneurysm of the aorta and this seemed to be justified by the X-ray plate though the physical findings were for the greater part indefinite or wanting. A routine study of this man's sensation showed that he was a tabetic and it was proven first by a positive Wassermann of the spinal fluid though the blood was negative and finally by keeping him in the ward until a well defined picture of tabes was established—sufficient to convince the utilitarian. In still another instance a great argument had arisen among the house physicians regarding a man suffering great pain in the epigastrium. One insisted on an organic gastric condition but the other was suspicious of early tabes. He had no Argyll Robertson pupil and no absence of tendon reflexes. A study of sensation settled the case as one of early tabes and the pain was gastric crisis.

Many cases of locomotor ataxia never show loss of knee jerks and, indeed, this reflex may even be exaggerated. Many others never present the Argyll Robertson pupil. The usual routine in the examination of such patients is to test the knee jerks, the pupils and the station. If the statement that these signs appear first was correct in all cases tabes would seldom be overlooked and in all the instances cited above this was done as a matter of routine, but it was obviously not enough.

*Read at the Pinehurst meeting of the North Carolina Medical Society, April, 1921.

Why we still put our dependence in the knee jerk is hard to explain. It is a well known fact that the Achilles or ankle jerk disappears always sooner than the knee jerk and in many instances the disappearance of this reflex will be the only change of this group occurring in tabes. It has been thought extraordinary by some European neurologists that American insurance companies have never specifically asked for this test as a routine in life insurance examinations. It is said that many cases of tabes as well as of alcoholic neuritis would thereby be caught and the companies protected.

A point of great importance in tabes is the fact that it may progress very slowly, or it may remain only partially developed and also that there is no orderly sequence in the symptoms. Many cases manifest very early primary optic atrophy and it may be this single symptom which directs attention to the disease. Invariably the primary optic atrophy of tabes is accompanied by some of the sensory changes, at least, which can be readily discovered if sought for.

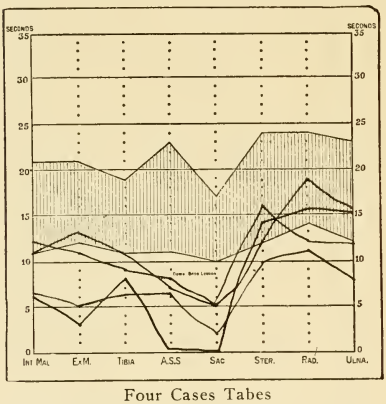
In London I was impressed with the great prevalence of gastric crises in tabes and some of the old observers at Guy's Hospital regarded gastric crisis as one of the very early signs of the disease. On the other hand, while at Mt. Sinăi Hospital in New York one of the neurologists was surprised that this should have been recorded as an early symptom of tabes because in their large service such was not their experience. Certainly no surgeon is safe who does not investigate abdominal pain from this point of view. When there is no time relation with the taking of food suspicion should be at once aroused for ulcer pain almost invariably presents this point. And yet I have now in mind a man who was emphatic that his gastric pain was always after the taking of food and never occurred at any other time. His pain on careful neurological investigation added to X-ray examination revealed the fact that it was tabetic crisis. If the surgeon does only the routine ward investigation of the patient from the tabes stand point: that is, tests the knee jerks, the pupils and the station he will miss almost as many cases as will occur without the consideration at all. He must remember that sensory symptoms and signs precede by periods of varying length any reflex sign and that gastric crisis is a sensory disturbance.

The two sensory tests offering the best returns in tabes are pain and vibration. Gordon Holmes depends largely on the covered pin point as he calls it. The pin is held against the ball of the finger in such a way that the observer may allow it to stick or may only allow the soft pad of finger to be felt. It is another method of applying the sharp and dull test. He has stressed the point that there are definite areas of analgesia occurring at the very beginning of tabes. These areas are easily detected by the dull and sharp pin test. The first area often is over the tibial crests. Another early point is the inner surface of the arm. A very dependable test is a band of analgesia surrounding the body passing around about the fourth and fifth ribs. This is easily detected by sticking the pin gently into the skin from below upward until the patient signifies that the point is no longer felt. It is best done with the patient's eyes closed. The most certain single area is the face. I have seen many patients in the clinic of Gordon Holmes with a pin sticking in the tip of the nose to which they were entirely unconscious. There is besides the tip of the nose butterfly areas to each side in many cases. I have seen this so often that it has become to me a test of great value and is a very early sign as well.

Williamson in England some years ago attracted attention to the value of the test of vibration sensation. He showed that in certain locations it was lost in tabes. The loss also occurs in certain cases of neuritis, in subacute combined degeneration of the cord and in localized lesions as a lesion of the cauda equina. It does not occur in disseminated sclerosis in any definite way.

Williamson did not use the quantitative estimation of the sensation at all. After his test it was only possible to say that the sign was present or absent. There were no gradations. As a matter of fact the loss in all nervous conditions is a gradual process hence it will be recognized that the case must have reached a high degree of development before the test would be present.

J. L. M. Symns, working in Guy's Hospital in 1911, used a tuning fork which had been introduced from Germany as a means of testing bone conduction by the ear specialists. This instrument I now show you. When it is started to vibrate you will note when holding it up to the light that there are two teeth or slots in the window placed at the free ends of the fork. This fork vibrates at the rate of 108.75 per second regardless of the violence of the starting blow but the force of the blow regulates the amplitude of vibration. The instrument is held between the observer and the light until the last bit of light is no longer seen then it is applied to the bony points indicated in the diagrams and the patient gives a signal when the vibration is no longer felt.



Four Cases Tabes

This is recorded in seconds. It will be noted in the diagrams that the shaded portion represents the normal range which I established in one hundred healthy people. In the tabetic curves noted in another diagram it will be seen that the line of the case falls below the minimum normal in many points reaching the lowest point in the sacrum. This dip at the sacrum is almost pathognomonic of the disease and is the very earliest indication. When it occurs it makes a clear indication for a lumbar puncture and then the evidences of a syphilitic process put at rest all doubt. If lumbar puncture was as routine a procedure as is the taking of blood for the Wassermann such tests would be largely superfluous. If the test only serves the purpose of directing our attention to the importance of a spinal fluid Wassermann it is well worth while.

In neuritis there will occur a lowering of the vibration time but the distinctive sacral dip of tabes does not occur for instead of a dip at the sacrum there is a rise well demonstrated in one of the charts.

In subacute combined degeneration or combined sclerosis or funicular myelitis, the neurological cord condition which so often occurs with pernicious anaemia, there is a lowering of the vibration time much as in tabes. Confusion with tabes in a word may be avoided by a lumbar puncture though there are numerous other clinical manifestations making the differentiation a simple matter.

As a routine if every case was tested over the sacrum with this instrument tabes would never be overlooked. It requires just about fifteen seconds time and does away with the necessity of any further search for tabes for the lowering of time always occurs in tabes and is always the earliest sign. It will be appreciated from the charts that if only a qualitative examination is made no value can be attached to the test. It is in those cases in which we can say that the time is reduced that we have a valuable aid. If the sensation is entirely lost the disease has reached such a point that the chiropractor makes the diagnosis across the street.

In conclusion I would urge the earlier diagnosis of tabes which can only be done when we look on it as a disease of altered sensation. The sensation tests are as simple as the reflex tests only requiring a little more time. And finally let it be remembered that the ankle jerk is always lost in tabes long before the knee jerk which latter may be preserved throughout.

THE RELATION OF THE PHENOL SULPHONE PHTHALEIN FUNCTIONAL KIDNEY TEST AND RETAINED BLOOD NITROGEN TO SYSTOLIC AND DIASTOLIC BLOOD PRESSURE IN THE PROGNOSIS IN CARDIO RENAL DISEASE.*

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In patients with high blood pressure we expect death eventually from cardiac failure, a broken blood vessel, or kidney incompetence. The heart, the blood vessels, and the kidneys are not worn out to an equal degree. How shall we find out in which organ the process is most advanced, so that our therapy may be directed chiefly toward protecting the weakest part? Cardiac decompensation approaches slowly, and can be postponed for months or years. Cerebral hemorrhage generally comes suddenly and unexpectedly and very little can be done to avoid such an accident. Failure of kidney function may come on suddenly without previous clinical warning, or its onset may be more gradual.

The relation of kidney function to arterial hypertension is unknown. A few years ago high blood pressure was thought to be secondary to chronic interstitial nephritis; today failure of kidney function is oftener considered a partial or secondary manifestation of so-called essential hypertension.

In estimating kidney function, the usual chemical and microscopical examinations of the urine are worth very little. Serious kidney incompetence may show neither casts nor albumen, whereas threatened cardiac decompensation may show albumen and casts in abundance in spite of very fair renal function.

The Phenol-Sulphone-Phthalein Functional Kidney test of Rowntree and Geraghty (1) shows the excretory power of the kidney, but does not indicate at what point in kidney failure, the output falls below intake. What we want to know about kidney function is whether or not the waste products of metabolism are wholly excreted or accumulating in the body fluids. The chemical analysis of the blood for Urea and Creatinin gives us a good indication of whether the kidney is competent or incompetent. In cardio renal cases, what relation does declining kidney function and blood nitrogen retention bear to the increase in blood pressure? Cadbury (2) says that Phthalein output varies inversely and blood urea nitrogen directly with the average systolic and diastolic blood pressure, but as his tables hardly confirm this statement, I have tabulated my own cases, correlating blood pressure readings with chemical analyses for blood urea and creatinin with phenol-sulphone-phthalein functional kidney tests.

The table shows that there is no constant relation of blood pressure readings to either blood nitrogen retention or Phthalein kidney output.

In reviewing the table, it will be seen that there have been thirteen (13) deaths, in ten of which the creatinin was above five milligrams per 100 cc. of blood, corresponding with the conclusions of Myers and Killian (3) that when blood creatinin is above five milligrams per 100 cc., early death may be expected and that in advanced cases of nephritis the blood creatinin furnishes a more reliable prognosis than any other test we possess.

The first case listed was seen one morning after a convulsion with blood pressure 210/115, blood and casts in the urine, blood urea 180, and blood creatinin 19.5. Even heroic bleeding, purging and saline infusion could not delay speedy death, with such nitrogen retention.

The fifth case was brought to the hospital for intestinal obstruction, but finally his bowels were moved. I saw him a week later in a mild delirium, with vomiting, increased rflexes and some rigidity of neck and back. Lumbar puncture revealed a clear spinal fluid, and his urine showed a trace of albumen and a few casts. Chemical analysis of the blood showed the young man to be an unsuspected case of uremia. The creatinin retention almost eliminates intestinal obstruction at once, as in obstruction there may be urea retention, but not creatinin.

The second case was seen in coma, deeply jaundiced, with clonic convulsions involving the lower jaw, the left arm and leg. The chemical analysis of

*Read before the 68th Annual Session of the Medical Society of the State of North Carolina, Pinehurst, April 26-28, 1921.

S. B. P.	D. B. P.	P. P.	F. K. T.	Blood Urea.	Blood Creat.	Urine.
210	115	95	----	180	19.5	Blood and Casts—D
118	80	38	----	300	15.0	Alb. and Casts—D
238	170	68	Trace	90	9.8	Alb and Casts—D
210	115	95	24%	86	6.5	Negative—D
140	90	50	----	169	6.0	Tr. Alb. and Casts—D
240	170	70	----	76	6.0	Alb. and Casts—D
226	156	70	11%	96	5.7	Tr. Alb. and Casts—D
120	80	40	----	76	5.5	Alb. and Casts—D
200	110	90	----	72	5.1	Tr. Alb. and Casst—D
215	150	65	1%	54	5.1	Alb. and Casts—D
208	110	98	53%	36	4.8	Negative
208	118	90	50%	---	4.6	Negative—D
270	130	140	----	20	4.5	Negative
190	100	90	58%	47	4.4	Negative
135	75	60	----	91	4.1	Negative—D
212	150	62	----	60	4.1	Tr. Alb. and Casts
218	124	94	38%	28	3.8	Tr. Alb. and Casts
234	150	84	27%	36	3.7	Alb. and Casts
285	140	145	27%	65	3.7	Negative
190	130	60	----	36	3.4	Negative—D
240	180	60	49%	42	3.25	Alb. and Casts
160	110	50	----	80	3.25	Alb. and Casts
230	110	120	42%	36	3.2	Negative
186	120	66	49%	30	3.0	Negative
195	130	65	46%	10.8	3.05	Negative
210	134	76	----	27.2	2.9	Negative
220	100	120	50%	54	2.9	Tr. Alb. and Casts
278	150	128	----	42	2.75	Alb. and Casts
220	110	110	62%	40	2.75	Casts
225	130	95	63%	12	2.6	Negative
240	180	60	21%	18	2.5	Alb. and Casts
180	110	70	40%	30	2.5	Negative
190	110	80	49%	30	2.5	Negative
240	124	116	----	12	2.4	Negative
230	130	100	55%	27	2.2	Negative
180	100	80	41%	12	2.2	Negative
160	110	50	41%	18	2.1	Negative
170	100	70	60%	42	2.0	Negative
160	100	60	43%	12	2.0	Negative
225	135	90	42%	18	2.0	Negative
165	100	65	45%	36	2.0	Negative
150	112	38	30%	36	2.0	Tr. Alb.
180	130	50	----	68	1.9	Tr. Alb. and Casts
200	110	90	53%	41	1.8	Alb. and Pus
215	125	90	43%	12	1.8	Alb. and Casts
178	65	113	55%	19	1.8	Negative
200	110	90	60%	12	1.6	Negative
170	120	50	48%	50	1.6	Negative
178	98	80	----	25	1.3	Tr. Alb. and Casts
220	140	80	24%	36	1.1	Negative

the blood at once established both the diagnosis and the prognosis.

Conclusions:

Neither systolic nor diastolic blood pressure varies directly with blood nitrogen retention nor inversely with the phenol-sulphone-phthalein kidney output. When five milligrams of creatinin and 70 milligrams of urea per 100 cc. of blood are found, the prognosis is grave regardless of circulatory conditions. In coma and delirium chemical analysis of the blood for nitrogen retention gives the quickest and surest information as

to the presence or absence of uremia. The value of the information sometimes obtained seems to justify a routine chemical analysis of the blood for nitrogen retention in all cardio renal cases.

I am indebted to Dr. H. P. Barret for the urea and creatinin estimations.

(1) Rowntree, L. G., and Geraghty, J. T., 1919, J. Pharm. & Exp. Therapy. 1:579.

(2) Cadbury, W. W.: 1916, Arch. Int. Med., Vol. 18, pp. 315.

(3) Myers, V. C., and Killian, J. A.: 1919, Amer. J. Med. Sc., Vol. 157, pp. 674.

LETHARGIC ENCEPHALITIS — DESCRIPTION, DIFFERENTIAL DIAGNOSIS, CHRONICITY*

By Archibald A. Barron, M. D.,
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The clinical picture of lethargic encephalitis presents many varieties. Literature abounds with examples of its polymorphous character. In view of the latter, errors of diagnosis are likely to be made. A presentation of all possible occurrences, with emphasis on the differential diagnosis, may be warranted and this is the chief object of the present contribution.

Three principal symptoms—rise in temperature, ocular palsies and somnolence—constitute the general characteristics of the disease. The onset is characteristic of an infectious process—the fever is accompanied by headache, backache and sometimes vomiting. After the disease has reached the phase of full development, it presents the above mentioned trio of symptoms. During this period the polymorphism of the principal manifestations and of additional phenomena sometimes presents diagnostic difficulties.

Somnolence appears in various degrees. In mild cases the patient has merely a frequent desire to sleep, although he may attend to his daily occupation. In others the somnolence may be more pronounced, the patient falling asleep with the greatest ease. In some cases the patient is in a state of absolute inertia.

Palsy of ocular muscles is a common symptom in lethargic encephalitis, which is usually an early manifestation. The most frequent symptom is ptosis, unilateral or bilateral. Diplopia is also a frequent symptom—strabismus may be observed. The third cranial nerve is more frequently involved than the fourth and sixth. The various muscles supplied by the third nerve are usually unequally involved in the same eye or in both eyes.

The internal muscles of the eyes are less frequently involved. Inequality of the pupils—myosis, paralysis of accommodation, nystagmos may be observed. In addition to the ocular nerves other cranial nerves may be affected in the following order: facial, hypoglossus, branches of the trigeminus, glossopharyngeal and spinal. Facial paralysis, difficulty in swallowing, in masticating, in breathing, in speaking, are then observed. In the latter case it may give the impression of pseudo-bulbar paralysis. Facial palsy may be bilateral.

Sensory disturbances are usually rare. In some cases, however, there have been reported large areas of anesthesia and in others areas of hyperasthesia so that the least touch produced pain. Excessive salivation, involvement of the sphincters in grave cases have been noted.

A number of other manifestations of a motor or psychic character are met with at times either in the early course or during phases of exacerbation. Thus in one case observed facial characteristics, tremor of hands and head typical of paralysis agitans developed. In another case observed there was marked muscular twitching; in another choreic movements were seen throughout the entire course; in another marked pain appeared in the arms; in another psychotic symptoms appeared during the first week. The patient was disorientated, confused and frequently wandered out of the house. Other cases have been reported with one-sided paralysis, Jacksonian epilepsy, cerebellar ataxia, meningeal symptoms, deafness, paralysis of lower extremities and symptoms of anterior poliomyelitis.

In a certain number of cases the trio of symptoms have not been complete. For instance, cases have been reported without opthalmoplegia or without lethargy or else with very slight somnolence. In one case observed the pa-

*Read before North Carolina State Medical Society, Pinehurst, N. C., April 26, 1921.

tient suffered with insomnia and sedatives were required to produce sleep. Abortive forms have also been reported.

Differential Diagnosis.

In making a diagnosis of encephalitis lethargica, one should bear in mind the three fundamental symptoms—somnolence, ocular paralysis and rise in temperature. The blood shows no significant change. The cerebro spinal fluid is usually clear without undue pressure and as a rule there is some increase cell count, lymphocytes in type. Observers have noted that this lymphocytosis occurs early, gradually diminshes and disappears. This fact is important for in meningitis the reverse is true. In a certain number of cases the spinal fluid has been found to contain an increased amount of sugar. This is important also, as in meningitis the contrary is true. In the tubercular form of the latter somnolence is usually present but the abundant lymphocytosis and tubercular bacillus in the spinal fluid, the disassociation of the temperature and pulse, also the irregularity of the latter, are all absent in lethargic encephalitis. In case of doubt as to the possibility of syphilitic meningitis, Wassermann reaction and treatment of antiluetic remedies will ascertain the nature of the condition. Epidemic cerebro spinal meningitis is characterized by a cloudy spinal fluid, marked leucocytosis and meningococci.

Cerebral abscess may also simulate encephalitis because of the somnolence, but the eye ground changes, the condition of the blood, slowness of the pulse will enable one to recognize the former. Tumor of the brain may also simulate encephalitis, in view of the motor disturbance and the drowsiness, but severe headache, optic neuritis or atrophy are encountered only in cerebral neoplasm.

Lethargic encephalitis may be confounded with hemorrhagic superior polioencephalitis but the latter runs its course without rise in temperature and is accompanied by marked nervous manifestations in the motor and sensory spheres, such as ataxia, unilateral paralysis of the extremities, abolition of tendon reflexes, disturbance of speech, mastication. Finally, there are present grave occular lesions. Infantile paralysis in its bulbar and pontine varieties may sometimes give the impression of encephalitis, but the predilection for early childhood, its occurrence chiefly in warm seasons, absence of meningeal reactions, paralysis and atrophy of the affected extremities are all characteristic of the former.

Comatose states are differentiated from encephalitic lethargy by total loss of reaction to sensory stimulation, while the essential characteristics of somnolence in encephalitis consists of responsive reactions to stimulation; the patient can be aroused for partaking of food, and to answer questions. Besides, profound coma is associated frequently with conspicuous motor disturbances due to profound cerebral lesions. Neither do we find the occular disorders characteristic of encephalitis. Intoxications may be accompanied by a state of stupor stimulating lethargy. The mental state following the administration of opium and chloral is analogous to, in fact identical with, that in encephalitis.

Stupor due to cerebral syphilis may present grave obstacles in formulating a diagnosis. In both conditions somnolence and palsies of ocular muscles are found. The stupor, however, in syphilis is continuous and if the patient is roused the mental condition is pronounced and patient is unable to understand fully what is spoken to him. An encephalitis patient, as a rule, answers questions correctly and takes his food properly. Finally the cerebro-spinal fluid will decide in favor of syphilis.

Chronicity.

Records show that there is a mortality of about 20% in acute cases and 50% show an incomplete recovery (two years' observation). The signs that tend to persist may be classified into three groups: The somatic, endocrine, and mental. In the somatic group we find various eye disturbances, tremors, disturbance of gait, Parkinson's syndrome, chorea, epilepsy, aphasia and all the various sensory disturbances. Among the endocrine signs are obesity, menstrual irregularity or menorrhea, polyurea, low blood pressure, and irregular pulse. Among the mental symptoms, those observed during the acute stage may long persist. In fact, in quite a few they are existing, at least, two years after recovery from acute illness. These symptoms consist of various confusional psychosis, marked irritability, depression and anxiety states.

THE TREATMENT OF TOXIC GOITER BY RADIATION.

Robert H. Lafferty, M. D., Charlotte, N. C.

During the last few years the literature has been rich in discussions of the condition known as Hyperthyroidism or Toxic Goiter. In an extreme case the symptoms are almost too well known to require mentioning but it is the atypical case that may baffle the diagnostician. Often the diagnosis can be made at first glance. The quick, jerky movements, the exophthalmus, and the striking energy and nervous speech will give the clue. The classical symptoms; via, nervousness and tremor, tachycardia and high blood pressure, exopthalmus, Stellwag's and Von Graefe's Signs, and the enlarged thyroid; any one or all may be present. The estimation of the basal metabolism has really become the test par excellence as a guide in diagnosis and treatment. This often reaches 50 or 75 per cent above normal and during treatment in the cases that show improvement it gradually drops as the symptoms improve. We have recognized the excessive metabolism in these cases and for years have watched for the increase in weight as an index to the progress of the treatment but since the advent of Bendict's method of estimating more acurately the metabolism we are better able to follow the improvement.

From an etiological standpoint, while there may be many factors that contribute, I believe they will all be found to fall under one of three heads as outlined by Aikens. First, the psychic. Those cases that follow any strong emotions as of fear, anger or shock. Coming under this heading may fall those cases that during the war were referred to as "effort syndrome" though I realize that many writers and observers still contend that this is not a condition accompanying hyperthyroid or associated with a thyrotoxicosis. But aside from these cases we do see cases that under some severe strain or shock develope the typical toxicosis of the thyroid type even to the exophthalmus.

Second: Focal infection. Many cases occur in which the symptoms follow some infection either in tonsils or elsewhere and such cases are greatly benefited of course by removal of the focus. Squires at Anarbor recently presented some interesting observations on the effect upon hyperthyroidism of a concurrent infection. He has found that at the time of an infection the symptoms of the toxicity become more severe and that afterwards the patients show a striking improvement which he thinks was due to some destruction of the cells.

Third: That type which accompanies over secretion of other endocrine glands, like the adolescent type, the flare up during pregnancy or at the menopause. We know that often thymus enlargement is associated with the thyroid and this is recognized as the type in which the surgeon has his sudden death. In all of Nordmann's cases (quoted by Pfahler) with sudden death a large thymus was found which has led him as well as other observers to conclude that thymus was the cause of the sudden death since a case with a thymus will not stand even a slight operation on the thyroid.

The treatment must be either surgical, medical, or radiological. "The consummation devoutly to be wished" is the curtailment of the activity of the gland and to do this we must first recognize that the thyroid is but one link in the chain in which the thymus, suprarenal, pituitary, parathyroids, gonads and possibly others of the internal glands may one or more play an important part.

In many cases if recognized early and the treatment pursued faithfully the medical treatment will have the desired result. Musser concluded an article just before his death on the management of goiter by saying, "Finally my conviction is that the surgeon does too much and the internist too little in the treatment of goiter." And Lichty, in quoting him, adds: "That the internist does his 'little' too late." The medical treatment supplemented by X-ray or radium has a very beneficial effect and in the majority of cases produces a cure. Since 1905, when it was first recommended, the X-ray has been used in a vast number of cases and the literature is replete with favorable reports. Means, in 1920, says: "My feeling is that our results have shown that it is always wise to employ the X-ray first, with the idea that the chances are good that it alone may cure and if it does not it will reduce the risk of subsequent surgery." Holmes in comparing the results obtain-

ed at the Massachusetts General Hospital by surgery and the X-ray, as shown by the basal metabolism, concludes that the normal condition is produced equally by both and that the length of time required to produce a cure is about the same.

We would not, for one moment, decry surgery, but we do urge the reservation of this valuable agency for cases demanding it. For example, the cases in which X-ray is contra-indicated, viz., the following, in which there are no toxic symptoms, the cystic, colloid, fibrous and nodular types, the intrathoracic goiter, and those causing pressure. Means and Aub say that if rest and roentgen ray fail to restore the metabolism to within 20 per cent of normal it is proper to consider surgery unless there be some contra-indication. Many of the leading surgeons recommend the radiation before surgery, either in the effort to cure or to make operation safer, and in these cases, as indeed all cases of thyrotoxicosis, it is very important to cover the thymus region. In cases having relapse after surgery radiology is the only resort. At the Mayo clinic they only treat the recurrences and claim excellent results. Stevens reports 90 per cent of cures by radiation.

Often the question is asked as to the danger of the treatment by X-ray. There are certain dangers recognized even in very careful treatment by experienced roentgenologists. In severe cases the toxemia may be increased by too large a dose in the first treatment and by the exertion of reaching the treatment room. This can be avoided by making the first dose light and by requiring the patient to keep quiet several hours before and after treatment. In very extreme cases radium would be the choice, since it can be applied to patients while in bed and with no exertion on their part. The danger of telengiectasis is slight but by proper treatment and filtration this can be avoided. The danger of producing hypothyroidism is also to be remembered and the case watched closely and treatment stopped before a complete cure is produced, for the effect of the treatment continues for some time after the last application of the ray. The estimation of the basal metabolism is of special value in avoiding this. So all told while just as in surgery there are dangers, certainly they are less severe and more easily avoided.

Within the last three years we have had a series of 55 cases under our care; 6 males and 49 females. The youngest was 16 and the oldest 65.

Dismissed as cured, 18.

No improvement, treatment stopped, 1..

Improved, not dismissed, but stopped treatment, 5.

Operated on, 6.

Post operative, 3, after an average of less than 4 treatments, and all showed some improvement. One had one treatment, did not return. Two are still under observation and much improved.

Lost sight of, 13. Did not return after average of less than 2 treatments.

Still under treatment, 9.

Total, 55.

The cases dismissed as cured average two years now with no recurrence and, while we realize that the lapse of time has not been enough to declare all of them cured, still we feel that in those cases where the patient felt well and when practically all the symptoms had disappeared, that we had accomplished what we desired and what the patient desired and that all we could do was to wait and see if there was any return. As a rule the first symptom to disappear is the nervousness and sleeplessness, and this was generally followed by the improvement in the circulatory system, though occasionally the order is reversed. Then gradually the other symptoms disappear except the tumor and the exopthalmus which leave slowly, if at all.

In conclusion and by way of summary: Medical treatment (including, of course, all hygienic measures) accomplishes results if used very early but the effects are greatly augmented by the use of radiation. Surgery will give the results, but should, as in other conditions, be reserved as a last resort. Radiation is invaluable as a pre-operative measure in extreme cases.

Finally, radiation should be used since it does give relief and generally a cure and since if used properly no harmful results are obtained and it does not, in any way, preclude surgery later if found that the case does not respond to radiation.

SOUTHERN MEDICINE AND SURGERY

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M. L. TOWNSEND, M. D.
J. C. MONTGOMERY, M. D. } *Editors*

CHARLOTTE, N. C.

"Read not to contradict and confute, nor to believe and take for granted, nor to find talk and discourse, but to weigh and consider."—Francis Bacon.

"Anti-Vivisection" Tommyrot Received a Hard Blow.

We wish everyone, whether a doctor or not, would read "The Truth About Vivisection" so clearly told by Ernest Harold Baynes in the July issue of the "*Woman's Home Companion.*" It is an article so full of truth and so free from malice and withal so well worth while, we would like to have it read in every school room and to every child of understanding years throughout the land.

Not, primarily, because the silly nonsense indulged in by a few grossly ignorant or misguided souls deserves serious refutation, but because reading this article will increase our love and respect for all dumb animals who have served a noble mission of alleviating human suffering.

To man, the most perfect creation of nature, was given a supreme intelligence and authority to have dominion over the earth. All other forms of life were given him for his use and benefit. Animal life and vegetable life may serve humanity as food, clothing, protection or remedial agent. By the eternal scheme of life man has a perfect right to slay the beasts of the field, the fowls of the air and the fish of the sea, to serve him as food that he may live.

The most rabid self-styled protector (?) of rats, and mice, guinea pigs and dogs chuckles with glee and self-satisfaction when a luscious beefsteak is set before him and forgets entirely the appealing eyes and agonized cry when the butcher's steel pierced that animal's vitals and its life blood ebbed away.

Mr. Baynes, recognized as an ardent lover of all God's creatures, tells the truth about the role of animal experimentation in the evolution of medicine and the saving of untold millions of human lives and unspeakable suffering. He explains and proves that the lower forms of animal life which are used for experimental purposes are treated with much more kind consideration than are those used for food or clothing purposes and that the benefits to mankind which have accrued from such investigations are infinitely more far reaching.

As a result of this article published in the *Woman's Home Companion*, some of these anti-vivisectionists are making themselves even more ridiculous by trying to boycott this publication for telling the world the truth. Every word they speak and every act performed will by its reflex action add justification to the cause and support to the author and editor for the service they have rendered mankind. Not to be sarcastic but in genuine sincerity we wish every misguided anti-vivisectionist had babies of their own instead of poodle dogs to need protection from diphtheria, typhoid, small pox, septic surgery, etc., then possibly their energy might be diverted to some useful purpose and mankind be made better by their having lived. It is even possible that some of them might serve the world as nobly as the little guinea pig whose name deserves a place in the Hall of Fame.

Wake County.

The County Society held its regular meeting August 3rd at the Dix Hill Hospital. The clinical session was held in the hospital auditorium at 10:30 a. m. Dr. Thomas M. Jordan read a paper on "Vocational Therapy for the Brain Sick" and to illustrate the efficacy of Vocational Therapy in such cases he presented a number of cases who demonstrated returning light after years of mental darkness. One of his outstanding cases had been an inmate for over twenty years, and unable to care for her own most primitive physical needs. With the more recent advent of vocational training or re-training of the brain sick it was observed that this hopeless helpless case showed some interest in music. This native inclination was encouraged and cultivated so that at this meeting she came on the stage and sang very creditably three or four selections. With the singing there came to her face an expression approaching intelligence. It may be yet this life after twenty-two years of oblivion may be brought back to normal activity by the application of careful patience in re-awakening and re-training her mind.

His paper was so pertinent that he was asked by a unanimous vote of the society to turn it over to the secretary that it might be published in the lay papers as a means of correcting in the minds of the laity, and the profession, the idea that is far too prevalent regarding our hospitals for the mentally sick. Such institutions are indeed places of refuge, but the day has long since passed when they are places of incarceration. They are hospitals for the application of scientific therapeutic principles that help sick minds to "come back."

Dr. Victor R. Small presented a case of uncertain diagnosis. This case illustrated the wisdom of the governor in appointing the advisory boards of physicians, surgeons and specialists for only by the co-operation of each class could this case get the fairest-best treatment. The question is: "Is this case pellagra, thyrotoxicosis, involutional changes or just a plain mental dwarf in whom involutional changes precipitated a mental break.

After the conclusion of the scientific meeting those present adjourned to a barbecue. An annual event of the Central Insane Hospital is a barbecue which all patients may attend who work or who manifest any effort toward making themselves useful. Four or five hundred patients attended this barbecue.

There was a very full attendance of Wake County members and also a number of guests, among these may be mentioned Dr. J. K. Hall of Richmond, Dr. Austin of the Connecticut State Hospital, Dr. Chas. O'H. Laughinghouse of Greenville, N. C., Dr. Wm. deB. McNider of Chapel Hill, Dr. J. G. Murphy of Wilmington, Dr. J. P. Monroe, Sanford, and Dr. M. L. Townsend, Charlotte.

Honor guests at the barbecue were Mr. and Mrs. Josephus Daniels.

The members of the advisory boards present were:

Dr. Charles O'H. Laughinghouse, Greenville.
Dr. C. A. Woodard, Wilson.
Dr. R. S. Beam, Lumberton.
Dr. Thos. C. Johnson, Lumberton.
Dr. Foy Roberson, Durham.
Dr. J. F. Highsmith, Fayetteville.
Dr. H. A. Royster, Raleigh.
Dr. Louis West, Raleigh.
Dr. J. G. Murphy, Wilmington.
Dr. W. deB. MacNider, Chapel Hill.

Dr. Albert Anderson and Mrs. Anderson, together with the hospital staff and their wives were most cordial and charming hosts and hostesses and the occasion was one of great benefit and inspiration for all present and we believe will be of great benefit to the entire State and especially to the mentally sick.

State Hospital—Dix Hill.

Incidentally we must remark that Dr. Anderson and the building board have gone right to work on the long needed improvements which the legislature made possible by recent appropriations. Work is in progress on new buildings and it is expected to provide accommodation for 500 additional patients and not only that but to also care for all patients much better than present equipment permits.

Actually under process of construction at the present are two dining rooms, each to accommodate eight to nine hundred patients and one on either side of the new and modern kitchen—one for men and one for women. Also to augment the important item of revenue from the farm and to supply an urgent need, work on farm buildings has already been begun. A hay barn is being built that will hold 400 tons of hay, a mule barn with 40 stalls, a dairy barn for 80 cows in connection with a large open shelter on the south and implement shed 200 feet long by 40 feet wide.

Last year's maintenance appropriation amounted to $228.00 per capita and from which had to be paid all salaries, wages, maintenance and upkeep.

It was only because of the very substantial revenue from the 1,400-acre farm that this amount could be spread over so large a surface and satisfactory results obtained.

This institution is, today, caring for 1,130 patients of which 179 are epileptics in the epileptic colonies. Since December 1, 1920, there have been 187 admissions, 59 probated and 10 discharged. There are now in this district about 900 names on the waiting list. For the State's epileptics, provision is made in the entire State for less than 200,—less than one man and one woman from each county. This is a pertinent fact from which you can draw your own conclusions.

Burke County.

The Burke County Medical Society held its regular monthly meeting Wednesday, July 13th, at the State Hospital, Morganton.

A number of important and interesting cases were discussed, along with several papers of marked value. Dr. John McCampbell discussed a case of Entero Colitis with perforation, with clinical symptoms and autopsy findings. Dr. Isaac M. Taylor told of an interesting case of luetic infection. Dr. W. H. Kibler read a paper on a case of Herpes Zoster with complications. Dr. J. B. Riddle read an instructive paper on a case of pneumonia complicated with premature delivery. Dr. James W. Vernon read a paper on the diagnosis, symptoms and treatment of a case of Acromegaly.

A committee was appointed consisting of Dr. John McCampbell, Dr. Isaac M. Taylor, and Dr. Jas. W. Vernon to adopt resolutions upon the death of Dr. Warlick, a member of the Burke County Medical Society for years.

G. M. Billings,
Secretary and Treasurer, Burke County Medical Society.

Onslow-New Hanover.

A joint meeting of Onslow-New Hanover Medical Societies was held Tuesday, August 9th. The afternoon session began at 2:30 p. m. and was held at the James Walker Memorial Hospital, Wilmington. The evening session was held at the Oceanic Hotel, Wrightsville Beach. Following is the program for this session:

"Traumatic Injuries of the Elbow Joint," by Dr. W. T. Parrott, Kinston-N. C., and Dr. Charles P. Magnum.

"A New Method for the Preparation of Autoginous Vaccines," by Drs. E. J. Wood and J. G. Dickson, Wilmington, N. C.

"As to the Treatment of Malaria," by Dr. Cyrus Thompson, Jacksonville, N. C.

"Gall Bladder Irrigatoin," by Dr. E. R. Hart, Wilmington, N. C.

"Modern Tendency in Public Health Administration," by Dr. J. A. Hamilton, Wilmington, N. C.

Medicine

Edward J. Wood, M. D., Dept. Editor

Cinchophen, Neocinchophen and Novaspirin in Rheumatic Fever.

The investigations made by P. J. Hanzlik and R. W. Scott and their collaborators, Cleveland (Journal A. M. A., June 18, 1921) disclosed that cinchophen gave partial relief from symptoms in rheumatic fever with doses of from 3 to 6 gm., and compete relief with doses of from 10 to 13 gm. (seven patients), while neocinchophen required a somewhat higher range of dosage, namely, from 3 to 8 gm. for partial, and from 11 to 16 gm. for complete relief (three patients). Novaspirin was therapeutically worthless in the treatment of rheumatic fever (three patients) not giving even partial relief from subjective symptoms. This is due to inadequate concentration of salicyl in the tissues, as indicated by the low (from 14.8 to 23.4 per cent) excretion of salicyl in urine after large doses of the drug. Large doses of cinchophen and neocinchophen, such as are necessary in the treatment of rheumatic fever, produce characteristic symptoms of salicylism ("toxicity") which, however, are less pronounced than those caused by corresponding doses of salicylate. Cinchophen differs from salicylate by causing epigastric pain owing, presumably, to local irritation by the drug. Pain in the epigastrium was absent after large doses of neocinchophen, presumably because of its relatively low solubility in water and weak alkalies, possibly also because it is an ester. Large doses of cinchophen were found to slow the pulse rate of both febrile and afebrile individuals, and the same occurred after neocinchophen in febrile patients. Therefore, the cardiac slowing produced by cinchophen is due to a direct depressant action on the circulation. Cinchophen is injurious to the kidney, as indicated by the occurrence of albuminuria, and sometimes casts and white blood corpusles, in the majority of seven individuals that were observed, and a diminution in the excretion of phenolsulphonephthalein in the five individuals that were studied. Neocinchophen is variable, albuminuria, and a diminution

in the excretion of phenolsulphonephthalein occuring in about one-half of the nine individuals that were observed. As compared with salicylate, cinchophen appears to be about equally efficient, while neocinchophen is somewhat less efficient, as judged by the dosage necessary for therapeutic relief in rheumatic fever. The symptoms of "toxicity" and the renal injury are less pronounced after neocinchophen than after salicylate in corresponding doses.

Diaphragmatic Spasms in Animals Produced With a Streptococcus from Epidemic Hiccup.

Mindful of the extreme specificity of bacteria isolated from various foci of infection in other diseases, Edward C. Rosenow, Rochester, Minn. (Journal A. M. A., June 18, 1921) thought that such areas might harbor the etiologic agent of epidemic hiccup. Three patients with prolonged uncontrollable hiccup have been studied from this standpoint. A suspension of the pus obtained from the tonsils was made in 2 c.c. of sal solution. Washings from the nasopharnyx, and suspensions of pus from pyorrhea pockets were also studied. From these suspensions bloodagar plate and glucose-brain broth cultures were made. Animals were inoculated directly with the suspensions in salt solution, and with the cultures in glucose brain broth. From 0.2 to 0.01 c. c. of the salt solution suspension, and from 0.2 to 0.0001 c. c. of the culture in glucose-brain broth were injected intracerebrally into rabbits and monkeys. After a period of incubation lasting from one to seven days, depending largely on the size of the dose and the virulence of the strain, a remarkable train of symptoms developed, in which rhythmic clonic spasms of the diaphragm were the striking feature. The organism isolated from the brain and spinal fluid of the animals that developed hiccup following injections of material from each of the three patients was a gram-positive, non-encapsulated diplococcus, which produced small, non-adherent greenish colonies on blood-agar plates, and short chains in liquid mediums. Cultures from the blood and other tissue were usually sterile or contained few bacteria as compared with the brain and cord. The freshly isolated strains from the first and third patients were agglutinated by an antistreptococcus serum prepared with a similar streptococcus isolated from a patient with lethargic encephalitis, but none were agglutinated by antihemolytic streptococcus serum, by the antistreptococcus serum prepared from one strain of the green-producing streptococcus found so commonly in influenza, or by the type pneumococcus serum. Filtrates of the nasopharyngeal washings, of suspensions from the pus from tonsils and teeth of the patients, of emulsions of brain and cord from animals that died with typical symptoms, and of cultures which proved sterile by cultural methods, gave negative results following intracerebral inoculation. The close relationship between epidemic hiccup and epidemic lethargic encephalitis, noted clinically, was suggested not only by the similarity of these strains to those Rosenow has isolated in encephalitis, but also by the results in the animal experiments. It was noted that after several animal passages fewer animals developed hiccup, and a larger proportion developed lethargic and other symptoms of encephalitis.

Disorders of Pituitary Gland.

Harvey Cushing, Boston, used this article (Journal A. M. A., June 18, 1921) as the presidential address which he delivered before the Association for the Study of Internal Secretions, Boston, June 6, 1921. His concluding remarks are: If this society wishes to play a useful role in furthering advances in endocrinology, it must, so far as possible, through the pages of its journal, keep such an exact almanac that those pursuing the subject in the proper spirit may be able to avoid unfavorable winds, currents and counter currents. It must discountenance the exploitation of the few discoveries which have already been made by those who recklessly under full sail plow through a fog bank of therapeutics, their horns tooting. Surely nothing will discredit the subject in which we have a common interest so effectively as pseudoscientific reports which find their way from the medical press into advertising leaflets, where cleverly intermixed with abstracts from researches of actual value the administration of pluriglandular compounds is promiscuously advocated for a multitude of symptoms, real and fictitious. Endocrinology as a special subject, if it wishes to survive and come

to be a factor in medical practice, must look out for the character of its clinical advance agents lest it come to be utterly discredited.

Significance of Diabetes Mellitus in Mental Disorders.

Horace Victor Pike, Danville, Pa. (Journal A. M. A., June 4, 1921) states that it is not uncommon to find patients suffering from various types of psychoses who present the clinical and laboratory evidences of diabetes mellitus, in which the glycosuria appears solely as a complication of the mental disorder. These psychoses should not be confused, however, with that more uncommon group in which the mental manifestations are unquestionably due to an autotoxemia resulting from faulty sugar metabolism and in which the psychic symptoms are typical and fairly constant. Pike reports two cases of psychosis complicated by diabetes mellitus and one case of psychosis induced by diabetes mellitus.

Basal Metabolism in Borderline Cases.

Sixty-eight cases of hyperthyroidism were studied by Charles G. Beall, Fort Wayne, Ind. (Journal A. M. A., June 11, 1921) with the object of comparing the clinical diagnosis with the basal metabolism. He found that an increase in the basal metabolism of 10 per cent is present in two-thirds of the cases presenting clinical signs and symptoms of mild hyperthyroidism. An increase in the basal metabolism of 10 per cent is present in one-fourth of the cases in which the clinical signs and symptoms were not considered sufficient to warrant a diagnosis of hyperthyroidism as being the prime factor in the diseased condition. As the basal metabolism rose, the percentage of cases clinically falling into the hyperthyroidism groups increased rapidly.

Chronic Pulmonary Tuberculosis, Primarily in the Lower Lobe.

Among 1,000 consecutive admissions to a sanatorium, Joseph Rosenblatt, Bedford Hills, N. Y. (Journal A. M. A., June 11, 1921) found only three cases of definite lower lobe tuberculosis. On physical examination, lower lobe lesions were found in eighteen other cases; but after careful study, seventeen cases proved to be nontuberculous, and in two patients old tuberculous lesions were found at both apexes, in spite of the fact that extensive physical signs were found at one base and that the upper lobes appeared to be normal. In the seventeen nontuberculous cases, eleven patients suffered from chronic nonspecific inflammatory conditions, and five from bronchiectasis.

Urology

A. J. Crowell, M. D., Department Editor

Marchildon, J. W.: Infection of the Kidneys Following Prostatectomy. Am. J. M. Sc., 1921, clxi, 243.

Marchildon assumes that in all cases of hypertrophy of the prostate with urinary retention there is infection of the bladder. If the prostate is removed immediately, the infection is very apt to spread to the kidney, producing a pyelonephritis. Mention is made of a group of cases in which the urine is clear and sparkling, there is no infection of the bladder and only slight retention but death occurs after a one-stage prostatectomy. In the author's opinion, infection occurs in such cases immediately after the operation, especially infection of the bladder, which results secondarily in pyelonephritis.

In the order of their occurrence the dangers following prostatectomy are toxaemia, haemorrhage, uraemia, and pulmonary complications.

In a study of the records of the postmortem examinations he has made, Marchildon found that pyelonephritis was a more frequent cause of death than any other condition. When uraemia was the clinical cause of death the postmortem examination demonstrated the presence of infection in the kidneys. The urinary bladder was infected in practically every case and seemed to be the point of origin of the pyelonephritis. The greater number of deaths occurred when the complete prostatectomy was done in one stage. A number of case histories are reported to illustrate the different types of cases and to demonstrate when and how infection occurs.

In the author's opinion preliminary treatment by means of prolonged drainage will prevent a great many deaths following prostatectomy which are due to infection. After free drainage has

been instituted and the patient has improved as much as possible, the second stage of the operation may be done.

Marchildon warns against immediate prostatectomy when the urine is found to be clear and there is little bladder retention, as in his experience the mortality is high after the one-stage operation. He advises cystoscopy in every case in which a prostatectomy is contemplated in order that complications such as stone, diverticula, etc., may be discovered and treated.

Systematic catheterization or the use of a retention urethral catheter does not give as good results as the suprapubic cystotomy. The infection is cleared up much more slowly by the former method than by the latter.

The author discusses his experience with haemorrhage following prostatectomy. He pays little attention to such haemorrhage as it has not been a cause of death in a single instance. There is little bleeding if the patient has been prepared for operation by prolonged drainage of the bladder.

Hartman, G. W., and Goldman, S. A.: Bilateral Nephrolithiasis. California State J. M., 1921, xix. 59.

The authors report a statistical study of 42 cases of nephrolithiasis representing all types, and discuss 6 cases in detail.

In 10 cases the condition was bilateral. Thirty-two of the patients were males, and 10 females. The youngest was 22 and the oldest 82 years. The average age was 43 years. The duration of symptoms ranged from two days to thirty-five years. The stones were situated on the right side in 14 cases and on the left side in 16. In one of the cases of bilateral stone a horseshoe kidney was found.

A carefully taken history is the first step in the diagnosis as it gives clues from which theories may be formulated. The symptoms of renal calculus are striking and characteristic to one used to interpreting them. In the cases reviewed the chief aid in the diagnosis was the radiogram. In 29 the presence of stones was shown by the X-ray; in 4 cases they were not found by the X-ray, but were later passed. In 2 cases they were found at operation. The physical examination rarely gives positive findings, but is of value in excluding other conditions. The cystoscopic findings were negative in the majority of cases. In one case a stone was discovered to be impacted in the ureteral orifice. Functional tests showed marked improvement after the removal of the stone.

Proper preparation is essential for clear radiograms. The authors obtain good results by giving ½ oz. of castor oil on the morning and evening of the day before the examination, allowing clear fluids but no milk that day and no breakfast on the day the plate is made. Enemas are not given as they tend to produce gas. The examination must include the entire urinary tract and show the bony and soft structures, especially the psoas muscles.

The authors sum up their conclusions as follows:

1. Bilateral nephrolithiasis does not differ essentially in history or symptomatology from unilateral nephrolithiasis.

2. A carefully taken history is the first essential to the proper study of the case.

3. The symptoms of renal calculus are frequently misinterpreted; hence the necessity of correlating all findings.

4. Pain is a constant symptom and varies from a dull ache to colic; radiation of pain is the most suggestive.

5. Frequency of urination is the most common symptom.

6. The physical examination is of value chiefly to exclude other conditions.

7. The cystoscopic findings are not striking.

8. Function is usually depressed on the affected side.

9. The X-ray gives the best evidence, but is not infallible.

10. Proper preparation for the X-ray examination and a study of the entire urinary tract are essential.

11. There is no objection to a pyelogram if the shadow-casting fluid can be drained off.

12. In bilateral involvement, the better side should be operated upon first unless distressing symptoms arise from the poorer side.

13. Patients with bilateral nephrolithiasis may do well if let alone.

14. The fact that some persons are calculus-formers suggests caution in operating and a guarded prognosis.

Genital Organs.

Dobson, J. F.: The Function of the Kidneys in Enlargement of the Prostate Gland. Brit. M. J., 1921, i, 289.

The author claims that to obtain a low mortality in prostatectomies, such as the mortality of 3 per cent reported by Freyer, requires rigid selection of cases.

The percentage of patients with hypertrophied prostates undergoing a prostatectomy varies with different operators. The author operates on about 75 per cent of his cases and finds that this percentage is gradually increasing.

Various conditions contra-indicating prostatectomy are listed. Patients with poor renal function due to back pressure are not infrequently seen among the better classes, but are rarely observed in the clinics. These men present themselves with a distended bladder, at times with complete retention, and often show signs of uraemia. The urine is sterile and the patient's general condition is poor. Such patients are poor risks; they will die if a prostatectomy is done, and if catheterization is resorted to a fatal infection may ensue.

In infected cases the infection may have extended to the kidney, producing a pyelonephritis. A long-standing pyelonephritis inevitably impairs renal function. There is distention of the ureter and renal pelvis, fever, renal pain, and enlargement and tenderness of the kidneys.

As tests of renal function, indigo carmine and phenolsulphonephthalin are used, but the author places the most reliance on the concentration of the blood urea.

The two-stage operation is employed in cases in which there is impairment of the renal function. The preliminary cystotomy is done under local anaesthesia and the time of the second operation under general anaesthesia is much shortened. The two-stage operation gives an opportunity to remove calculi and clean up infection, and relieves the back pressure on the kidneys before the important step in the procedure is carried out. The patient's general condition improves, the uraemic symptoms disappear, the appetite becomes normal, sleep is obtained, and the patient is therefore in a much better condition to stand the shock of prostatectomy.

Some operators advocate the two-stage operation for prostatectomy in all cases. It is impossible to determine beforehand which cases are good operative risks and the possible benefits of a period of drainage of the bladder should be extended to every patient. Freyer claims that the two-stage operation delays the necessary radical operation and renders it more difficult to enucleate the tumor because of the induration developing about the suprapubic wound.

In a series of cases in which blood-urea determinations were made it was found that the urea concentration corresponded very closely to the clinical symptoms. Following cystotomy there was a decided fall in the urea content of the blood.

Renal function may be impaired even when there is no infection of the urinary tract. On the other hand, there may be a marked infection without impairment of the renal function.

In preliminary cystotomy in infected cases the author applies the Carrel technique. Tubes are placed in the bladder and antiseptic irrigations are given every two hours. As Dakin's solution is too irritating and flavine is comparatively ineffective, eusol is used in most cases. The bladder is kept dry by a suction apparatus. Under this treatment the pus and foul odor of the urine rapidly decrease and infection about the wound and in the space of Retzius does not occur. This instillation method is effective also in preventing infection in patients with infected bladders. In order to minimize postoperative infections the author continues the antiseptic instillation after the prostatectomy. Undue haste in closing the bladder may at times prevent the clearing up of a serious infection. The urine may be directed through the urethra but pyuria may persist, increase, and act as a typical focus of infection.

By estimating the blood-urea content it is possible to ascertain the amount of impairment of the renal function. Improvement in the infection of the bladder is determined only by ordinary clinical observations.

Fullerton, A.: Stenosis at the Internal Meatus After Suprapubic Prostectomy. Brit. M. J. 1921, i, 301.

The author describes the stenosis which occasionally results at the vesicoprostatic orifice following prostatectomy. In certain cases, shortly after the prostate is removed, it is difficult or impossible to pass a catheter or an instrument into the cavity of the bladder even though there is no difficulty in mictutrition. The instrument seems to be in a free cavity below the bladder; injected fluid reaches the viscus but it is difficult to insert the tip of the instrument into the bladder. This difficulty is due to the lack of the guidance of the prostatic urethra and to the fact that the vesical orifice of the prostate cavity is not in alignment with the direction of the urethra. A contraction of this orifice adds to the difficulty.

Several illustrative cases are given. In one case the author found it necessary to do a suprapubic exploration of the bladder. A tent-like membrane was found almost completely covering the prostatic cavity, the bladder outlet having contracted down to a very small opening. This vesicoprostatic membrane was enlarged. The suprapubic wound then healed readily and after a short time the patient was able to urinate normally.

To prevent recurrence of this condition the author cuts the vesicoprostatic septum at the time of operation. When the complication is suspected, urethral dilators should be passed for some time following prostatectomy.

Mental and Nervous

Jas. K. Hall, M. D., Department Editor

In this column, in the July issue of this Journal, in reviewing the case of the State against Peacock, the department editor made use of the following language:

"If a person be insane, regardless of whether he has attempted to kill himself, or has succeeded in killing his fellowman, why should he be sent to the penitentiary? A hospital, and not a penitentiary, is the proper place in which to care for the insane.

"Should not the department in the penitentiary for the so-called criminal insane be a part of a State hospital?"

The paragraph above provoked the editor of the Statesville Landmark, in its issue of July 25, under the caption of "Misleading," to make comment in part as follows:

"In reality these people are not sent to the penitentiary, are not made convicts, nor are they treated as convicts. They are sent to a department of the State prison, which is set aside for the care and treatment of that class of insane. * * * * But it is only a part of the truth to say that they are sent to the penitentiary, which leaves an entirely erroneous impression. They are sent to an insane hospital which is a department of the State prison. It isn't quite as up-to-date as the regular hospitals, but the inmates have medical attention and are made comfortable, and it may be added that a good many people are of the opinion that they are sufficiently provided for—at least until the other and larger class of insane are fully provided for."

The department editor has great respect for the ability and the high character of the editor of The Landmark, but surely The Landmark's editor must be laboring under a mistaken notion when he asserts that the so-called criminal insane are not sent to the penitentiary. These folks, between fifty and a hundred of them, are in the penitentiary. They are in the State's prison, in the penitentiary building, under the authority of the penitentiary board, under the supervision of the superintendent of the penitentiary, cared for by penitentiary guards, and medical attention is given them by the penitentiary physician. But they are not in a hospital. They are in the penitentiary—in the same penitentiary as are the convicts, in the same building, and cared for by the same management.

If their bones were deformed they would be treated in a hospital provided by the State; if their vision had faded they would be instructed in a school in Raleigh; if their hearing had vanished they would be made capable men by Superintendent Goodwin in the wonderful institution in Morganton; if they were simply and solely insane they would be in the great building on Dix Hill or in the other great institution at

Morganton; but, since they are criminally insane, (What does it mean?) they are in the penitentiary and not in any kind of hospital.

A good many years ago an effort was made to hand the penitentiary building over to the State hospital authorities to the end that it might be transformed ino a great asylum. Dr. P. L. Murphy said it could not be done. Recently the building and the grounds, by legislative enactment, were handed over to the State Hospital at Raleigh to be made into an addition to that great institution. The superintendent of the State Hospital induced the State to take it back. He thought the transformation could not be made.

One wing of it may be suitable, as it stands, for the criminal insane. The editor of The Landmark says it is. But it is not a hospital. Legislative fiat does not make a hospital. Even though the criminal insane may have been poorly accoutred intellectually or morally in the beginning, and although they may have been overwhelmed by disease or disaster, they should be thankful that they find lodgment in the penitentiary instead of a seat for the moment in the great, wooden chair.

This is not a criticism of anybody. It is the expression of an objection to a particular system. A system is the manifestation of the mental attitude generally of a group. The group or the individual generally dislikes a change of mind. The change implies previous error. Mankind hates a new idea. The writer knows that the criminal insane are as well cared for now in the penitentiary as the circumstances will allow.

If these folks are criminals, let them be punished; if they are insane, let them become patients in a hospital for the insane.

Orthopaedics

Alonzo Myers, M. D., Department Editor

The Role of Cancellous Tissue in Healing Bone.

T. Wingate Todd, F. R. C .S. (Eng.) Ann, Surg., 1920. Vol. 72, pp. 453-466.

The paper contains a digest of observations made on about two hundred cases of chronic osteomyelitis, the result of wounds, in the Base Hospital, Wolseley Barracks ,London, Ont., in 1918. Most of these cases presented cavities in the long bones and therefore gave an excellent opportunity of studying the relation of cancellous tissue (or medullae) to healing bone without the complication of periosteal involvement. Various technical problems relating to effective treatment of such cases are dealt with in the body of the paper. The author's results regarding cancellous tissue are summarized in the following manner.

1. Cancellous tissue is one of the chief agents in regeneration of bone, and like the cambium layer of periosteum should be treated at operation in the most conservative manner, consistent with thorough exploration and drainage.

2. In regeneration the cancellous tissue nearest the mid-length of the bone grows most rapidly, whereas that in or near the articular extremities shows less readiness to proliferate and fill the cavity.

3. Septic bone cavities should be permitted to heal from the bottom, the wound in the soft tissue being kept widely open until this has occurred. The least possible mechanical disturbance of the cancellous tissue should be employed and no "disinfection" of the cavity attempted, for this simply kills the remaining tissue from which regeneration is expected.

4. Regenerating bone is very sensitive to and easily affected by pressure, even of soft tissues, and by inefficient drainage. It is not adversely affected by the ambulatory method of treatment.

The work results practically in a restatement of principles laid down by Ollier but lest the reader's mind be diverted from the real significance of the paper, reference to the famous Duhamel-Haller controversy in any of its phases is avoided. In this case the work was carried out entirely upon men. Ollier's experiments were upon animals. Here one finds confirmation for man of Ollier's observations upon the osteogenetic power of the "marrow" in dogs. Again one finds the tube experiment of Ollier on the rabbit tibia reproduced and followed up in the long bones of man. The essential lesion of the work is that cancellous growth, though considerable, is delicate but that with proper care it can be encouraged and the cavity filled in a

reasonable time with new bone after which, and not before, the soft tissues may be allowed to close.

Epicondylitis Humeri.

Louis Carp, Surg., Gynec., and Obst., March, 1921.

Epicondylitis humeri is a condition found in those engaged in heavy manual labor characterized by pain in the elbow region, functional impairment to a greater or lesser degree, persistent tenderness limited to the epicondyle of the humerus and extreme weakness of the forearm. Lifting with the hand in supination is possible with great difficulty, but almost impossible with the hand in pronation. There is no atrophy. X-ray examination shows no definite or constant changes. The average duration is about six weeks, but the condition may last several months with periods of intermission or remission. The symptoms may disappear gradually or suddenly. The etiology is doubtful. Influenza, strain, neuralgia and trauma are possible etiological factors. An analogous syndrome may occur in the styloid process of the radius and the condyle of the femur. The best therapy seems to be immobilization and baking.

Roentgenology

Robt. H. Lafferty, M. D., Dept. Editor

The following resolutions adopted by The Radiological Society of North America at annual meeting, Chicago, December, 1920, will be of interest to the entire medical profession:

Whereas, the question of the ownership of the roentgenogram has never been definitely settled, and

Whereas, other points regarding the ethics and conduct of radiologists relative to the disposal of their roentgenogram records and reports of their findings, have never been clearly outlined, therefore, be it

Resolved, by The Radiological Society of North America, that it is the sense and judgment of this society, that all roentgenograms, plates, films, negatives, photographs, tracings or other records of examinations are hereby declared to be the exclusive property of the radiologist who made them (or the laboratory where they were made); and be it further

Resolved, that the ethics of this society shall be in full harmony with the "Principles of Medical Ethics of the American Medical Association, with the following additions, to-wit:

The radiologist is hereby declared to be a consultant in all cases where he is called upon to examine patients.

The radiologist shall not make known to patients, their relatives, friends or guardians, any of his findings or conclusions, nor shall he deliver to them any of the plates, negatives, films or prints, unless expressly requested to do so by the physician or surgeon who referred the patient for examination, or is in charge of the case.

It shall be considered unethical for anyone to claim superiority in diagnosis or treatment, due to some secret process, method or apparatus held to be known only by the claimant.

Hospital and Sanitorium

Jno. Q. Myers, M. D., Department Editor

Hospital Survey of North Carolina as compiled by the Council on Medical Education and Hospitals of the American Medical Association, for the year 1920.

North Carolina	Total Beds	Aver. Beds In Use
Asheville, 28504—Buncombe		
Asheville Mission Hospital	85	63
Fairview Cottages Sanit. (T.B.)	30	---
Meriwether Hosp. and Tr. School	75	40
St. Joseph's Sanitorium (T.B.)	50	---
Winyah Sanatorium operated by Von Ruck Memorial Sanatorium, Inc. (T.B.)	125	80
Biltmore, 172—Buncombe		
Clarence Barker Memorial Hospital and Dispensary	45	30
Swannanoa Hill Sanit. (T.B.)	27	---
Black Mountain, 531—Buncombe		
Cragmont Sanatorium (T.B.)	50	50
Fellowship Sanatorium of the Royal League (T.B.)	30	---
Burlington, 5,952—Alamance		
Rainey Hospital	25	---
Charlotte, 46,318—Mecklenburg		
Mercy General Hospital	50	40
New Charlotte Sanatorium	75	50
Presbyterian Hospital	100	78

St. Peter's Hospital	60	---
Durham, 21,719—Durham		
Lincoln Hospital	50	34
Fayetteville, 8,877—Cumberland		
Highsmith Hospital*	75	50
Gastonia, 12,871—Gaston		
City Hospital	33	18
Gaston County Sanatorium	30	15
Goldsboro, 11,296—Wayne		
Goldsboro Hospital	40	---
Magnolia Grove Hospital	10	3
Spicer's Sanatorium	25	18
Greensboro, 19,746—Guilford		
St. Leo's Hospital	100	75
Wesley Long Hospital	35	---
Hamlet, 3,659—Richmond		
Hamlet Hospital	40	20
Henderson, 5,222—Vance		
Sarah Elizabeth Hospital	25	12
Hendersonville, 3,720—Henderson		
Edgemont Sanatorium (T.B.)	25	---
Patton Memorial Hospital	26	---
High Point, 14,302—Guilford		
Guilford General Hospital	36	19
High Point Hospital	40	35
Kinston, 9,771—Lenoir		
Parrott Memorial Hospital	40	6
Lincolnton, 3,390—Lincoln		
Lincoln Hospital	25	18
Lumberton, 2,691—Robeson		
Thompson Hospital	25	15
Morehead City, 2,958—Carteret		
Morehead City Hospital	35	18
Morganton, 2,867—Burke		
Grace Hospital	32	17
Mt. Airy, 4,752—Surry		
Martin Memorial Hospital	35	28
Newbern, 12,198—Craven		
St. Luke's Hospital	40	25
Raleigh, 24,418—Wake		
Mary Elizabeth Hospital	32	20
Rex Hospital*	85	55
St. Agnes' Hospital	95	---
Roanoke Rapids, 3,369—Halifax		
Roanoke Rapids Hospital	45	25
Rocky Mount, 12,742—Edgecombe		
Atlantic Coast Line Railroad Hos.	30	14
Parkview Hospital	60	---
Rocky Mount Sanitarium	60	37
Rutherfordton, 1,693—Rutherford		
Rutherford Hospital	50	37
Salisbury, 13,844—Rowan		
Whitehead-Stokes Sanatorium	58	30
Saluda, 549—Polk		
Infants and Childrens Sanitarium	45	---
Sanatorium (P. O. only)—Hoke		
Sanat. for Treatment of Tuberc.	200	200
Statesville, 7,895—Iredell		
Carpenter-Davis Hospital	25	15
Long's Sanatorium	50	25
Tarboro, 4,568—Edgecomb		
Edgecomb General Hospital	50	25
Washington, 6,166—Beaufort		
S. R. Fowle Memorial Hospital	25	20
Washington Hospital	35	---
Waynesville, 1,942—Haywood		
Waynesville Hospital	25	8
West Durham, 2,000—Durham		
Watts' Hospital	100	---
Wilmington, 33,372—New Hanover		
James Walker Memorial Hosp.*	225	90
Wilson, 10,633—Wilson		
Carolina General Hospital	45	---
Moore-Herring Hospital	35	25
Wilson Hosp. and Tuberc. Home	28	---
Winston-Salem, 48,395—Forsyth		
Forsyth County Tuberc. Hosp.	30	18
Winston-Salem City Mem. Hosp.	85	60
Eighteen General Hospitals of less than 25 beds	295	101
Totals	3,362	1,662

In North Carolina the following sixty counties have no hospitals: Alexander, Alleghany, Ashe, Avery, Bertie, Bladen, Brunswick, Cabarrus, Caldwell, Camden, Caswell, Chatham, Cherokee, Chowan, Clay, Cleveland, Columbus, Currituck, Dare, Davidson, Davis, Duplin, Franklin, Gates, Graham, Granville, Greene, Hertford, Hyde, Jackson, Johnson, Jones, McDowel, Martin, Mitchel, Montgomery, Nash, Northampton, Onslow, Orange, Pamlico, Pasquotank, Pender, Perquimans, Person, Pitt, Rockingham, Sampson, Scotland, Stanly, Stokes, Swain, Transylvania, Tyrell, Warren, Washington, Watauga, Wilkes, Yadkin, Yancey.

Clinical and Professional Notes

J. Allison Hodges, M. D

The Necessity for Revision of Nurse-Training Courses—General Summary of Articles Published in June and July Issues.

Education, as well as hospital preparation in training a nurse, are eminently desirable and necessary, and the teaching of the 55 practical nursing methods, such as "Care and Feeding of Infants and Children," "Surgical and Gynecological Nursing," "Fever Nursing," "Private Duty Nursing," etc., and the repeated drilling in, and practice of these also should be more strongly emphasized, for these practical methods almost alone, fused and blend-

ed into the life and training of the educated nurse, together with a mother-spirit, which, with every sacrifice, finds its atonement and with every service, its achievement, will develop useful and satisfactory nurses, with the dominant quality of service, as their highest badge of professional attainment.

In the solution of a matter which, like this, touches so many angles of social and professional life, naturally there will be differences of opinion. For instance, in an informal inquiry among the hospitals in Richmond, it was ascertained that the owners and managers of the twelve hospitals in that city were in favor of a two-year course, while on the other hand, a decided majority of the superintendents of these same hospitals favored a three-year curriculum.

The remedy, in general terms, for this state of affairs, and in order to supply the insistent demand is either a shorter course for the graduate degree or the establishment of training centers for a short, practical course for licentiates.

This question, being largely professional, has, so far, been discussed mainly by the medical and nursing professions, who are naturally best acquainted with all the points involved.

The physicians contend:

1. That too much time is expended in a three-year course of training for nurses, in comparison with the average length of time that they practice their profession;

2. That too much time is devoted to the science of medicine and not enough to the art of nursing, and that this has had a tendency to result in special graduate nurses, instead of practical graduate nurses, willing to devote their time to the more ordinary cases of illness;

3. That the period of time, in calendar months necessary for graduation, is exactly equivalent to that now devoted by young physicians to their education; in the one case, twelve months in three years, and in the other, nine months in four years.

4. As a result of this, and other conditions named in the preceding general consideration of this subject, pupil nurses are decreasing.

The nurses claim:

1. That at present, too little time is allowed for the acquisition of the necessary knowledge to fit a nurse properly for her profession;

2. That small hospitals and hospitals not properly equipped with adequate facilities for training nurses in their training schools, are the vital cause of a decrease in pupil nurses;

3. That hospital training schools which are properly equipped, are now having an increase in the number of pupil nurses, it being reported that 50 per cent of the training schools in Virginia now have a sufficient number of students.

It is unnecessary to give statistics to prove the present shortage of nurses, or even the approximate percentage of decrease as compared with former years, but the common and insistent report through out the State of Virginia, as well as in other States, substantiated by the confirming voices of many sufferers, seems to be self-evident proof that this condition does exist, and is constantly increasing.

Whatever may be the causes, the fact remains that the problem confronting us is a very present and urgent one. The work of the nurse, in her sphere, is almost sacred in character, and should be ennobling, for its cardinal principle, devotion to service for others, should cause humility in its rendering, and as in the case of the single-hearted and high-minded physician in a larger sphere, should bring contentment with its performance and not ambitions out of alignment with higher purposes, and if at times, one in the ministration of duty should forget her obligation, we should not indict the entire profession for this dereliction, but strive the more to make the servant worthier of the high ideals of professional practice.

The remedy sought, and the method adopted, should be one that will not lower the standards of nursing, but on the contrary one that will elevate the profession by inviting a better qualified element to enter it, and also one that will adjust and equalize the training courses with a view of better fitting the nurse to meet the actual and necessary duties of practical nursing, and of properly and successfully applying the physician's daily instructions. In this plan, the fullest justice must be accorded to the nurse, and the future interests of the patient, which are paramount, must also be conserved.

If, after a reasonable period of practice, the nurse should wish to further

fit herself for some specialized work, let her, like the physician, take post-graduate courses, with this specific end in view.

There will never be sufficient nurses, in the light of conditions made evident by the economic social reaction from resultant post-war adjustments, but the profession of nursing may be made more attractive and fitted for larger usefulness, in my opinion, if there is a revision of the training school schedule of theoretical studies, discontinuing some now taught and substituting more practical branches and more clinical demonstrations, and omitting some academic and scientific requirements now obligatory; in short, the whole course to be made more practical, as well as more personal and efficient, by always having a fully competent and interested staff of instructors who will give continuous and constructive courses with special consideration to the student per se, and to all that directly concerns her individual interests, as pertaining to the patient, the physician and the public. This is important, for as much care should be given to teaching and treating the nurse properly, as to treating the patient successfully—perhaps this is sometimes forgotten by the hospitals.

A revision and rearrangement of the nurses' training course now will be in line with changes and adjustments in medical schools and hospitals, now taking place, and experience proves that it is better to give a student, either medical or nursing, no course whatever in the basal sciences of medicine, than to give a superficial one, which always is as unsatisfying and bewildering, as it may be dangerous. It must be acknowledged by all that have given it thoughtful attention, that the action of the medical profession in advancing the requiremens for the education of physicians, was too drastic and precipitate, and has been an error, if not a serious fatality, so far as rural communities are concerned, and it is important that all due care now be exercised in the changes proposed for the future training school courses of nurses, in order that they shall be thorough and efficient, as well as practical and profitable to all.

Personally, I am convinced of the entire practicability of a revised two-year course of training, for teaching nursing alone, and am willing to admit that a three-year course is not even long enough to teach a nurse both nursing and medicine, as some seem to deem essential, but which, to my mind, is absolutely unreasonable, undesirable and unnecessary. Many of the best nurses we now have, had only a two-year training course, and the three-year course even now, is really only a two-year course, as far as actual teaching is concerned.

There will be, of course, different views as to the best methods for the continued training of nurses, in order that the greatest good to the greatest number may be accomplished, but it is hoped that the whole subject will be approached with a reasonable and dispassionate disinterestedness, especially for the public and professional welfare, for the nurse, individually, has a duty to those who call her, and we believe that in humility and in service will she answer.

As a citizen, too, she has a community obligation, and through organization, an unusual opportunity to identify herself with the private and public interests of the people, living with them rather than on them, and with proper preparation, and through the common tie of human sympathy, the ability to preserve and perpetuate the high ideals of her honored profession in the spirit of hope, and with the certainty of conquest.

The emergency is upon us—the issue must be met and solved, but not by dictation by any one person, or profession, but by the co-operation of all.

Gynecology and Obstetrics

Robt. E. Seibels, M. D., Department Editor

Records of Patients—The taking of a careful history, and recording it, the making of a thorough examination, and recording it, and keeping notes of progress; this sounds simple or complicated depending on what you are accustomed to. Not infrequently these methods applied to a case by a specialist will clear up a problem that has bothered a general practitioner for a long time. In watching the work of these two exponents of the profession one comes to the conclusion that the difference in the success of the two lies in the above.

No history form is necessary; most ingenious ones have been put out but experience with them leads to their discard. A 4x6 index card is convenient for the pocket, easily filed and one will contain all the data necessary for the average case. Make the history legible, concise and clear, boil down the mass of heresay evidence, superstition and old wives' tales to symptoms and signs—not "female trouble," for example, put "menstrual onset at 14, every four weeks, regular; at 20 began to have pain two days before periods, colicky, nauseating, no vomiting, relieved by flow, periods increasingly irregular." Be sure to put down in her own words just what symptoms are the most prominent. Then the treatment and the progress. This method will often clear the diagnosis and not infrequently will later justify the physician. A case in point, a patient consulted us, we advised and performed an operation, and some months later she appeared at the office very much dissatisfied by the result. "I have not become pregnant and I would never have had the operation performed except that you assured me I would have a baby." Reference to her card showed that in answer to the question, "What is the important things that you complain of?" she replied: "This horrible pain every month." And we had noted, "Advise operation for relief of pain, conservative as to sterility." When this was brought to her attention, she remembered the conversation perfectly, apologized for her hasty words, and left us in a more friendly mood, and promptly paid her bill.

The Examination—A stethescope, a good light, the patient undressed, a pair of gloves, a speculum, a cotton swab, a glass slide, a needle for puncturing the vein, a tube for the blood, containers for urine, feces and sputum, a blood pressure apparatus. Start with the hair and examine the body to the toes; use two sheets and expose a portion of the body at a time. Take routine specimens of the excretions and of the blood, but do not be too routine in examining. Go at each portion of the anatomy as though there lay the key. Above all things, *see*. Now record the findings. I believe it was T. C. Janeway who said the difference between a doctor and a consulting diagnostitian was that the latter always made a rectal examination! Record the findings at once; if you wait till "later" you are lost.

Now the progress. How often I have heard some remedy being praised as always successful; questioning reveals that the impression is that it is successful but the doctor hasn't a single note on the cases in which he used it and cannot show that the condition itself has really been changed.

If you see the case when you haven't the card with you, make notes on a prescription blank, and pin this to the card. File the card by number and index it under name. If you wish a complete index, you can cross it as freely as you wish under disease, treatment or payments.

These observations bring to your attention no new thing; the methods are old and you have frequently heard them explained and recommended. The point is, aren't they worth while to you, no matter what branch of medicine you practice, and wont they really help your patients?

Nurses' Corner

Edith M. Redwine, R. N., Dept. Editor

The Nineteenth Annual Convention of the North Carolina State Nurses' Association held at Wrightsville Beach June 13-16 was one of the most successful meetings ever held by this organization.

Presided over by Mrs. Dorothy Hayden, in her own gracious, inimitable manner, every hour from the first business meeting on Tuesday morning to the closing session of the League of Nursing Education Thursday evening was crowded with interesting and instructive material.

Dr. J. C. Seegers, pastor of St. Paul's Lutheran Church, opened the convention with prayer, after which reports were heard from the various association officers, all of which showed that the affairs of the organization are in good shape in every way and that the past year has seen much good work done to promote the welfare of members and to increase their efficiency. The treasurer's report indicated that the association now has 450 members, located in various parts of North Carolina. It was also brought out that one district's report to the treasurer showed three members have out-of-the-State addresses, which caused Mrs. Hayden to call attention to the fact that the organization's by-laws provide that only nurses residing in North Carolina can belong to the association, and nurses from other States now working in this State were

urged to transfer their memberships at the earliest possible moment.

Mayor Thomas H. Wright, of Wrightsville Beach, briefly but cordially welcomed the nurses to his town, calling attention to the absence of mosquitoes and the general good health conditions there, and bidding them make free use of all the attractions the beach has to offer. Mayor Wright paid a pretty tribute to nurses in general in tracing the history of administering to the sick and wounded, in peace and in war times, from pre-Revolutionary days up to the present.

Dr. J. B. Cranmer, president of the New Hanover County Medical Society, waxed eloquent in welcoming the visitors on behalf of the physicians and surgeons of the community, and told the nurses Wilmington and her suburbs were as glad to see them now as they were to welcome them during the influenza epidemics of 1918 and 1919. He declared the nurse's work was one of service and self-sacrifice, and said the "ministering angel" has always been found doing her duty gladly and cheerfully. He hoped the convention would be pleasant and helpful for all in attendance and that the nurses would return to their homes better prepared than ever to "comfort the bodies and strengthen the souls of men."

Miss Columbia Munds, of Wilmington, welcomed the visitors for the nurses of district No. 10, declaring it to be a pleasure to have the convention there. She invited the delegates to call on the local nurses for anything they wanted to make their visit pleasant.

Mrs. Hayden, in responding to the three welcome addresses, said it had already been shown that Wilmington and Wrightsville Beach were really royal hosts and she was very sure that in such a hospitable atmosphere the convention attendants would be able to not only enjoy themselves, but entirely forget for a time their work back home and plan for bigger things in the future.

The second response was by Miss Edith Redwine, president of the North Carolina League of Nursing Education. She thanked the welcomers heartily for their remarks, and said she was sure this was going to be a most successful meeting, one that will enable the nurses to take away more valuable information than they brought. She also reviewed the growth of her organization, and told of its hopes for further progress.

The afternoon session was given over to the private duty section, with Mrs. Hayden presiding in the absence of Miss Reinhardt, chairman. Papers were read, as follows:

"What Organization Has Meant to District No. 2," by Miss Lillian Ketchie, Winston-Salem; "The Private Nurse as an Asset to Her Community," by Miss Effie Cain, Salisbury; "Experience in Emergencies," Miss Alexander, of Asheville; "A Case of Sleeping Sickness," by Miss Marie Farley, Wilmington; "Recruiting Student Nurses from a Private Duty Nurse's Standpoint," by Miss Mary Rose Batterham, Asheville. Then followed a discussion on the papers read, and on several other timely subjects. Reports of delegates were made after this discussion.

It is interesting to note that the State is now fully organized into districts, ten in number, and that each district was represented by one or more members.

At the evening session a Red Cross round table presided over by Miss Mary L. Wyche, the first president of the association, brought out many interesting points concerning our membership in the Red Cross.

Mrs. Dorothy Hayden and Miss Lois Toomer spoke interestingly of impressions gained at the Red Cross round tables at the Kansas City meeting in April.

Letters from Miss Jane Van DeVrede, director of nursing, American Red Cross, were read and regret was expressed on all sides that owing to illness she was unable to be present.

At the completion of Tuesday's program moving pictures were shown and the nurses were honored by a reception given by the St. Barnabas Guild of Wilmington.

Wednesday, June 15, was given over to the Public Health Section and an interesting and instructive program filled a busy day.

Miss Katherine Myers of Charlotte presided over this section.

After the business session papers were read and discussed as follows:

"The Set of the Sail"—Rose M. Ehrenfeld, R. N., director, Bureau Public Health Nursing and Infant Hygiene.

Care and Treatment of a Baby in the

First Year—Dr. J. Buren Sidbury, Wilmington.

Symposium on Little Mother's Leagues:

1. Publicity, enrollment, organization, etc., Martha C. Newman, Wilson County Public Health Nurse.

2. Type of instruction, methods, results desired, Clara Ross, R. N., Edgecombe County Public Health Nurse.

The Nurse's Bag—Ellie C. Nelson, Lincoln County Public Health Nurse.

The Modern Health Crusade—Mabel Craft, Moore County Public Health Nurse.

Why is a Public Health Nurse?—Marion Manning, Bureau Public Health Nursing.

Why Belong to a National Organization?—Mrs. Lionel Weil, State Lay Representative of N. O. P. H. N.

Making Public Health Nursing an Integral Part of the Community Life—Virginia Gibbes, R. N., Assistant Director, Public Health Nursing, Southern Division, American Red Cross.

Recreation and Health—Mrs. Claire S. Thomas, Division of School Extension, State Department of Education.

Co-ordination of Public Health Nursing With Other Elements of County Health Work—Dr. K. E. Miller, Director County Health Work, State Board of Health, Raleigh, N. C.

Relation of Public Health Nursing to Child Hygiene—Mrs. Ruth A. Dodd, R. N., Director, Bureau Child Hygiene and Public Health Nursing, South Carolina.

The Unreached Child in the Open Country—John F. Smith, Ph. D., Professor of Social Science, Berea College Academy, Berea, Kentucky.

Another interesting feature on this day was the round table luncheon given by the Wilmington nurses to the three sections of the association—Private Duty, Public Health, League of Nursing Education.

Each group discussed its own problems while they were enjoying the delicious food so generously provided.

At both the afternoon and evening sessions beautiful music was rendered by a number of Wilmington's most talented musicians.

Thursday morning, after a general business session and the election of officers the League of Nursing Education held a short business meeting.

At the roll call members responded with a report of the progress of nursing education in their own community, and much interesting information was brought out along this line. Reading of the report of the year's work by the president showed that many localities have been alive to their own responsibility in the matter of recruiting students.

Miss Lois Toomer, president of the Board of Examiners for nurses brought forth an interesting discussion on irregularities in the training schools of the State.

In regard to credit time for previous training it was recommended by the league to the Board of Examiners that in order to comply with the State law and requirements for eligibility to the State Nurses' Association that such time should not exceed one year, the nurses receiving two years from the hospital from which she receives her diploma.

This recommendation will be sent to the accredited training schools.

The afternoon session was held at the James Walker Hospital, Wilmington, where a most interesting demonstration was given by Miss Sears, Instructor of Nurses, followed by delicious refreshments, and a tour of this, the largest hospital in the State.

Not the least enjoyable feature of this afternoon was the drive over the city of Wilmington and back to the beach in time for the evening session, an account of which is given elsewhere.

Invitations for the next meeting were received from Niagara Falls, Hiddenite, Winston-Salem and Greensboro, and quite a spirited rivalry took place between the representatives of these two districts before Greensboro was finally selected as the place for the next annual meeting.

News Items

Married.

Dr. Charles E. Lyday of Gastonia, N. C., and Miss Naomi Davie Pool of Kinston, N. C., were married June 28.

Deaths.

Dr. Lycurgus L. Saton, Tarboro, N. C. 72 years old. Grad. N. Y. University, Medical College, 1869. Practiced medicine in Tarboro for fifty years. Died July 1 from heart disease.

Dr. Eli S. Warlick, Morganton, N. C. Born 1853. Graduated from University of Tennessee, College of Medicine, 1881. Licensed 1885. Died July 4, 1921.

Dr. Andrew J. Smith, Garner, N. C. Graduated from Vanderbilt University, Nashville, Tenn., 1912. Died at Winston-Salem, N. C., June 22, 1921, in a hotel from overdose of morphine.

Dr. Thomas T. Earle, Greenville, S. C. Graduated George Washington University, Washington, D. C., 1870. Born 1845. Died June 30, 1921.

Dr. M. W. Parks, LaGrange, N. C.; Medical College of State of South Carolina, Charleston, 1875; died after a long illness, at Mount Olive, N. C., May 31.

Dr. James E. Brooks, Blowing Rock, N. C. (license, North Carolina, 1897); a member of the Medical Society of the State of North Carolina; at one time superintendent of the North Carolina State Tuberculosis Sanatorium, Montrose; died, May 19, aged 50.

Dr. Daniel Greenlee Caldwell, Concord, N. C.; University of Maryland, Baltimore, 1885; a member of the Medical and Chirurgical Faculty of Maryland; died, May 13, from paralysis, aged 58.

Dr. Robert R. Jetter, Union, S. C.; Medical College of South Carolina, Charleston, 1890; health officer of Union; died, May 7, aged 55.

Dr. Thomas C. Doyle, Orangeburg, S. C.; University of Maryland, Baltimore, 1889; mayor of Orangeburg, three successive terms; also a druggist; died, June 4, of cerebral hemorrhage, aged 55.

Dr. Allen D. Evans, Christiansburg, Va.; University of Virginia, 1904; member of Virginia State Medical Association; died, suddenly, May 17, while returning from a visit to a patient, aged 52.

Dr. William B. Daniel, Disputanta, Va.; Medical College of Virginia, Richmond, 1863; a Confederate veteran; died at Richmond, June 12, aged 81.

Dr. Jesse P. Rex, Richmond, Va.; Medical College of Virginia, Richmond, 1903; died, May 21, aged 42.

EXAMINATION QUESTIONS.

Virginia.

At a meeting of the Virginia State Board of Medical Examiners, held June 14-17, 1921, the following questions were used.

Anatomy and Histology.

Dr. W. W. Chafin, Pulaski, Virginia, Examiner:

1. Name the different kinds of bones, and give the characteristics of each.
2. Describe the sternum and give its articulations.
3. Describe the articulation of the Atlas and the Axis.
4. Describe the Biceps Brachii. (Biceps) muscle.
5. What is the diaphragm? Name its openings, and what passes through each.
6. Give origin, distribution and relations of the Phrenic Nerves.
7. Describe the left Subclavian Artery.
8. Describe the gross structure of the Spleen, and give its relations.
9. Describe the spermatic veins and explain why we oftener find variocele on the left than on the right side.
10. Give Histology of the Pancreas.

Theory and Practice of Medicine.

Dr. J. H. Ayres, Accomac, Va., Examiner:

1. Describe appearance and treatment of (a) psoriasis, (b) urticaria.
2. Give dietetic and medical treatment of chronic constipation.
3. Give symptoms and treatment of lobar pneumonia.
4. Give diagnosis and treatment of gout.
5. Give etiology and treatment of erysipelas.
6. Give medical and dietetic treatment of diabetes.
7. Give differential diagnosis between true and false croup.
8. Give symptoms and treatment of angina pectoris.
9. Give treatment of (a) hook worm, (b) lumbricoid and (c) pin worm. What section of this country is hook worm most commonly found?
10. Give dietetic and medical treatment of mucous colitis.

Surgery.

Dr. P. W. Boyd, Examiner:

1. How does a chronic abscess differ from an acute one?
2. What is an ulcer and describe a simple ulcer?
3. What symptoms indicate a bad prognosis in shock?
4. Give symptoms and cause of phlebitis.
5. Give clinical history and diagnosis of acute osteomyelitis.
6. Describe talipes varus and talipes equinus.
7. Differentiate supra condyloid fracture of the humerus and backward dislocation of the radius and ulna.
8. Describe Padgett's Disease of the Bones.

Gynecology.

9. What are the degrees of prolapsed uteri?
10. Describe the parovarium.

Pathology.

Dr. Sam. W. Maphis, Examiner:

1. What are the possible pathological lesions in the third stage of syphilis?
2. State the results of stenosis of the tricuspid valves of the heart.
3. Discuss the pathology of gastric ulcer.
4. How does infective inflammation differ from simple inflammation?
5. What pathological changes in lung tissue occur in the various stages of lobar pneumonitis?

Bacteriology.

Dr. Sam. W. Maphis, Examiner:

1. What organisms are to be considered in infections of the eye?
2. What laboratory procedures should be carried out in establishing a diagnosis of (a) Tubercular meningitis, (b) Cerebro spinal meningitis?
3. What are vaccines? Name those of proved value in the prevention of disease and those in the treatment of disease.
4. Give the functions and products of bacteria.
5. Enumerate the characteristics of the bacillus of Diphtheria.

Materia Medica, Therapeutics and Toxicology.

Dr. H. U. Stephenson, Examiner:

1. What is Materia Medica?
2. What is the meaning of untoward effects or by-effects of drugs? Give two examples.
3. Name six of the most poisonous drugs. Give antidote for each.
4. What methods and drugs are used to produce Diaphoresis?
5. Give the physiological action and use of Copaiba.
6. Give agents and methods to reduce local inflammation.
7. Give doses of the following drugs: Chloral Hydrate, Sodium Bromide, Sulphate of Atropine, Codeine Sulphate, Tincture Digitalis, Nitro-Glycerine and Argenti Nitras.
8. Give treatment for acute opium, lead, carbolic acid and bichloride of mercury poison.
9. Name two drugs that act as irritant poison on the kidney.
10. Name four of the most powerful heart depressants. Give their physiological actions.

Obstetrics and Embryology.

1. Describe a cross section of the placenta?
2. Where does fertilization usually occur? Give the predisposing causes of ectopic pregnancy?
3. Give the most frequent cause of abortion. How determine?
4. Enumerate the factors concerned in the mechanism of labor. Enumerate the probable causes of the onset of labor.
5. On advent of labor, give diagnosis of first position of vertex.
6. Give diagnosis and treatment of a rigid os-uteri.
7. Define the second stage of labor. Give its management.
8. Diagnosis, dangers and treatment of placentae succenturiatae.
9. Indications for podalic version. Precautions to be taken.
10. Indications for caesarean section.

Chemistry and Physiology.

Dr. I. C. Harrison, Examiner:

1. Give the function of the pulmonary artery and pulmonary veins.
2. Give the composition of blood—lymph—bile—spinal fluid.
3. What is the function of the Cerebrum? Define motor aphasia, sensory aphasia.
4. Discuss the metabolism of fats—the function of vitamines.

5. Name the halogens. Give chief properties and uses.

6. What is composition of urea? How much urea should an adult excrete per day?

7. What are Chloroform and Iodoform derived from? What is denatured alcohol? Wood alcohol?

8. What are the effects of respiration on the blood? Compare inspired and expired air.

9. Give test and antidote for Arsenic.

10. What is cooking soda? Give chemical action in baking powder.

Medical Jurisprudence, Hygiene and Preventive Medicine.

Dr. P. St. L. Moncure, Norfolk, Va., Examiner:

1. Define Criminal Malpractice. Criminal Abortion. Infanticide.

2. Can a parent be held criminally liable for refusing or neglecting to employ proper medical or surgical services for his minor child through religious tenet or belief—strangulated Hernia, for instance? Why?

3. What is malingering?

4. What is a dying declaration? And what are the essential conditions to the admissibility of such statement, as evidence in court?

5. Name four or more preventable physical causes of mental diseases.

6. What are the two most common sources of typhoid infection? How would you proceed to find out the cause of an epidemic of typhoid fever? and prevent its spread?

7. Name four insects which act as disease carriers and name the disease carried by each.

8. In the matter of personal hygiene: what rules would you give as regards air and food?

9. What is epidemic encephalitis, so called "sleeping sickness?" What steps would you take towards controlling it?

10. What does the persistent presence of colon baccili in spring water suggest?

Principles and Practice of Osteopathy.

Dr. Edwin H. Shackleford, Examiner:

1. Explain how, in each case, lesions of the fifth Cervical, first Dorsal and head of the first rib might cause enlargement of the thyroid gland.

2. Explain how a slipped innominate can produce sciatica.

3. Name three organic diseases in which knee reflexes are lost.

4. Give location of the vaso-motor centers to the following: (a) liver, (b) kidney, (c) heart; also sensory nerves to: (a) stomach, (b) ovary, (c) heart.

5. Where and how would you treat to remove functional cardiac murmurs?

6. Why does haemic stagnation in spinal centres disturb circulation in the related viscera?

7. Give treatment, and instructions to patient, for chronic constipation.

8. How are we to judge when kyphosis and scoliosis are causative factors in disease?

9. Differentiate infective arthritis and tuberculosis of a joint.

10. Give diagnosis and treatment of lobar pneumonia.

North Carolina.

The North Carolina Board of Medical Examiners held its annual meeting at Raleigh, N. C., June 20-25, 1921. The following questions were used:

Anatomy.

Dr. L. A. Crowell:

1. Give origin of a Dermoid cyst of the ovary.

2. Name the muscles of the Orbital Region and give their nerve supply.

3. Describe the circle of Willis.

4. Describe the Portal Circulation.

5. Name the nerve of expression, give its deep origin and Foramen of exit.

6. Describe the Thoracic Duct.

7. Describe the Gasserian Ganglion.

8. Bound Scarpa's triangle and give name and relation of the structures that pass through it.

9. Describe the Jugular Foramen, and name the structures that pass through it.

10. Name structures and in order that would be cut in an amputation at junction of middle and lower third of the thigh.

Surgery.

Dr. L. N. Glenn:

1. Upon what general principles has modern surgery attained its present status?

2. State some conditions which might require intra-venous saline solution—which might require transfusion, and describe technique of each operation.

3. Differentiate acute intestinal ob-

struction from other acute abdominal conditions and give surgical treatment of same.

4. Give symptoms, diagnosis, and operative treatment of strangulated inguinal hernia, and of hydrocele.

5. Treat the following fractures: Compound of middle of femur, fracture of surgical neck of humerus with subglenoid dislocation of head.

6. Reduce the following dislocations: Head of femur, lower jaw, shoulder.

7. Discuss the surgical significance of jaundice.

8. Define ankylosis, angioma, exostosis, pseudarthrosis, pyonephrosis, phlebotomy, cholecystenterostomy, paracentesis, naevus, oophorectomy.

9. State some conditions which would justify or require an abdominal colostomy and describe method of doing the operation.

10. Describe operation for talipes equino varus and name other varieties of this condition.

Histology, Pathology and Bacteriology. Dr. C. A. Shore:

1. Discuss briefly the pathology and bacteriology of epidemic influenza.

2. Discuss wound healing.

3. Discuss the criteria of malignancy of tumors; (a) name three malignant tumors giving sites; (b) name three benign tumors giving sites.

4. Give an outline of the method of the Wassermann test for syphilis.

5. Given a laboratory culture of an organism growing on agar agar, how would you distinguish between typhoid, paratyphoid A, paratyphoid B, and Bacillus coli?

6. Describe the bacteriology of Vincent's Angina.

7. Discuss briefly the method of infection of: (a) Two diseases caused by protozoa; (b) two diseases caused by filtrable virus.

8. Name diseases against which you would recommend prophylactic vaccination.

9. Name diseases against which you would recommend curative sera.

10. What is the difference between active and passive immunity?

Obstetrics, Gynecology and Pediatrics. K. P. B. Bonner, M. D.:

1. Define (a) Obstetrics; (b) Gynecology; (c) Pediatrics.

2. What are the diameters of the normal female pelvis at the superior strait expressed in centimeters? What are the causes for variations from the normal measurements? What is the effect of these variations from the normal upon the act of normal labor?

3. Tell in their usual sequence the symptoms and signs of normal pregnacy, both subjective and objective.

4. How would you treat a central placenta praevia associated with a transverse position of the unborn child and associated with severe hemorrhage?

5. Describe: (a) Precocious menstruation; (b) delayed menstruation; (c) menorrhagia; (d) metrorrhagia; (e) amenorrhea; (f) vicarious menstruation; (g) dysmenorrhea; (h) climacteric.

6. Describe in detail the secondary repair of a median perineal laceration involving the sphincter ani muscles.

7. Give the etiology, symptoms, diagnosis and treatment of carcinoma of the uterus.

8. Give the differential diagnosis between cholera infantum, acute ileo-colitis and chronic ileo-colitis.

9. Outline a plan for the successful treatment of a case of enuresis in a child five years of age.

10. Name the incubation period of: (a) Diphtheria; (b) scarlet fever; (c) pertussis; (d) measles; (e) varicella; (f) epidemic parotitis.

Note—Each question will be counted as eight points on the total. The practical examination will have a value of twenty points.

Chemistry, Physiology and Hygiéne. Dr. Wm. M. Jones:

1. Define: Inorganic, organic, acid, base, salt, efflorescence, deliquescence, and katalytic action.

2. To what is temporary and permanent hardness of water due, and how may temporary hardness be removed? How is ethyl ether made and what are its properties?

3. What are the Halogens, and what do they form when combined with other Elements? What are Alkaloids, and to what chemical group or groups do they belong? Name the liquid volatile ones.

4. Define enzymes, and give their general properties. What is a hormone and chalone? Are all proteins of equal value as food? Why?

5. What are the functions of the leucocytes? Are leucocytosis and leucopenia both always pathological?

6. What are vitamines, and where are they found?

7. Trace briefly the fifth cranial nerve from its deep origin to its final distribution, and give its general functions.

The following to be answered by those who are taking final examinations.

8. Define the terms Hygiene and Sanitation. Name the common acute communicable diseases, and by what means each may be communicated.

9. Name the different sources of drinking water, and tell how each may be safeguarded. In estimating a city's water supply, what should be the minimum for each inhabitant per diem?

10. How may night-soil of small towns and rural communities be disposed of so as to be of little danger? What is a septic tank and what is the theory of its operation?

Practice of Medicine.

Dr. William P. Holt:

1. Differentiate typhoid fever from aestivo autumnal fever, first week.

2. Name types of malarial fever. (a) Cause of each. (b) Give briefly treatment of each. (c) Why is it so important each case should be treated until cured?

3. Give synonyms and early symptoms of tabes dorsalis, etiology, and treatment.

4. (1) Give symptoms of pernicious anemia: (a) Blood picture. (b) Prognosis. (c) Treatment.

(2) What is found in blood of Leukemia that is characteristic that is not found in normal blood?

5. Give exciting cause, diagnosis and treatment of Cerebro-spinal Meningitis.

6. Define the following signs and name condition in which each is found: Kernig's sign, Romburg's sign, Dalrymple's sign, Skoda's sign, Von Graefe's sign.

7. Give differential diagnosis between Membranous Croup and Spasmodic Croup, and give treatment of each.

8. What is Bell's Palsy? Where is lesion found, symptoms and treatment.

9. Discuss briefly Gastric Ulcer and give treatment.

10. Name some indications and contra-indications of Gastric Lavage.

Materia Medica, Therapeutics and Pharmacology.

Dr. J. G. Murphy:

1. Give the principal alkaloid of belladonna and indications for its use; also dose.

2. What is incompatibility in medicine, and what are the different kinds of incompatibles? Give an example of each.

3. Give a brief description of some conditions in which serum therapy has proved successful.

4. State the effect on the circulation of medicinal dose of Nitro-Glycerine; Digitalis; and Strychnia.

5. Explain the effect of Acetanilid and the cyanosis it sometimes produces; dose.

6. Name three (3) useful emetics. Give dose.

7. Mention four (4) preparations of opium and two alkaloids; dose of each; its physiological effect; symptoms and treatment of toxic dose.

8. What remedies are useful in cerebral anemia and in cerebral hyperemia? Give doses and methods of administration.

9. Give the symptoms and treatment of strychnin-poisoning.

10. Write a prescription for acute conjunctivitis. What is a mydriatic? Name two or more. What is a myotic? Name two or more.

Dr. Harold E. Shirley.

Announcement is made that Dr. Harold E. Shirley will become associated with Drs. Matheson, Peeler and Sloan of Charlotte, N. C., after August 15.

Dr. Shirley is a native of South Carolina, a graduate of the Citadel, The University of South Carolina, The Johns Hopkins Medical School and for three years an associate of Dr. Crow in Baltimore in the Hopkins Ear, Nose and Throat Clinic.

We have heard the rumor that these doctors are negotiating for the building, in the near future, of a thorougly modern and complete Eye, Ear, Nose and Throat Hospital in Charlotte.

Chiropractor Fined—A news item states that, June 13, W. H. Gittings, chiropractor of Bethlehem, Pa., was found guilty of practicing medicine without a license and fined $1 and costs.

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THE SURGICAL TREATMENT OF GONORRHOEAL EPIDIDYMITIS.

By Hamilton W. McKay, B. S., M. D.,
Of the Crowell Clinic of Urology and Dermatology, Department of Urology,
Charlotte, N. C.

Urologists are as much at variance in regards to the treatment of gonorrhoeal complications as they are about the treatment of simple uncomplicated gonorrhoeal urethritis. Each urologist who lands his pet drug today may discard it tomorrow for another "would be specific." In like manner, each one has a pet scheme for treating gonorrhoeal complications which he believes to give the best results.

Those of us, who were interested in the study of gonorrheal epididymitis during the war seem to be of the opinion that surgical interference in acute gonorrhoeal epididymitis gives the best results and is termed by some enthusiasts as the ideal treatment. One of the kind lessons impressed upon me during my two years of service, is that nothing was ideal connected with war, not even the "Battles of Paris, Bordeaux, and Nice" in which so many medical officers played a very prominent part. Therefore, I do not then propose to present for your consideration an ideal treatment for the most troublesome complication of gonorrhoea, but to review one which is based on pathological findings, common sense, and which has given splendid results in my hands.

Fig. 1

Fig. 1. Longitudinal Section Through Human Testis and Epididymis.
The light areas between the lobules are the fibrous-tissue septa of the testis; × 2.

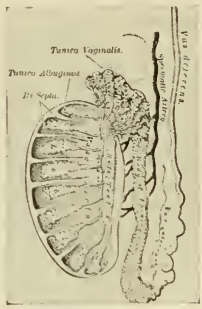

Fig. 2

Fig. 2. Vertical Section of the Testicle, to Show the Arrangement of the Ducts

In presenting this paper it is my earnest desire to support this form of treatment from my own experience and to especially emphasize its value in recur-

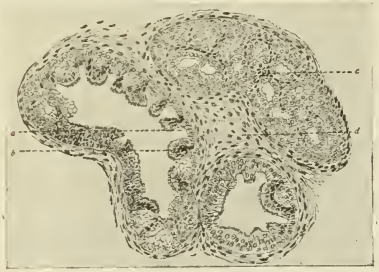

Fig. 3. Section Through Human Vasa-Defferentia

a, Glands; b, ciliated epithelium; c, glandular structure; d, connective tissue

rent gonorrhoeal epididymitis about which I have seen nothing written per se.

In reviewing the literature on this subject it seems that Pirogoff punctured an epididymis as early as 1852, and Smith in 1864 reported a series of 1,000 cases in which he punctured the epididymis with good results. In 1906 Dr. Francis R. Hagner, of Washington, D. C., published the technique of epididymotomy and it is largely due to his efforts that the operation became successful. The surgical treatment of gonorrhoeal epididymitis, while it is an accepted one, is not properly explained in our popular texts nor do I believe many urologists have studied the histo-pathology upon which this surgical procedure is based. It is with special reference to this part of the subject that I wish to call your attention.

Grossly, this disease passes through two phases: first, an acute inflammatory process with marked swelling in the globus minor, major and body of epididymis with abscess formation in 60%

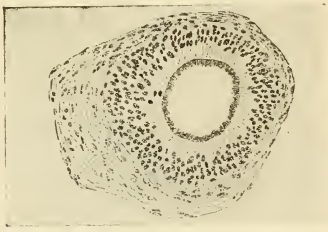

Fig. 4. Cross-Section of Vas Epididymis of Human Testis

or more of the cases with the seat of abscess generally in the globus minor. An accompanying inflammatory hydrocele is the rule and is generally diagnosed clinically as an orchitis which is not substantiated at operation. The time we expect to demonstrate this phase of the pathology is from three to six days after onset. The second stage is from the end of the first week until resolution is complete. In this stage the indurated areas are hard, usually fusiform in shape and as a rule gross pus is not easily demonstrated. After the fifth day there is generally agglutination between the visceral and parietal layers of the tunica vaginalis, therefore great care should be taken not to open

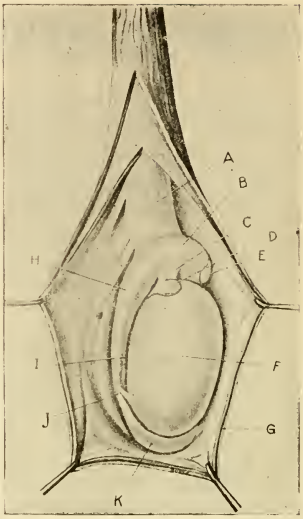

Fig. 5. Testicle and Its Coverings

A, spermatic cord; B, globus major; C, superior ligament of epididymis; D, appendix testis; E, hydatid; F, testis; G, tunica vaginalis; H, epididymis; I. sinus epididymis; J, inferior ligament of epidimis; K, globus minor.

the tunica albaginea. In this stage we see many cases of acute funiculitis especially if the vas is much involved. When this is encountered the covering of the cord should be opened and drainage instituted.

From a histo-pathologic point of view acute gonorrhoeal epididymitis cannot be considered other than an acute inflammatory process. The pathology produced by the gonococcus in this appendage does not differ grossly from that seen in the fallopian tube except as the histological structures vary. In the former one we have a convoluted tube of very small lumen and in the latter a comparatively straight one. In both appendages the end result is the same namely, pus formation.

It is difficult to explain why the gonococcus invades one of the ejaculatory ducts and not the other when they are only a few millimeters apart but we do know that epididymitis is usually unilateral. After an infection of the ejaculatory duct there is generally an infection of the whole lower seminal tract, the infec-

tion terminating in the globus minor. In collaboration with Dr. Jack Cunningham, of Boston, Dr. Mallory showed in a minute pathological study of resected portions of the epididymi that within three days after infection the small ducts are distended with leucocytes and in places there is dissolution of the tissues with abscess formation. In the later stages of the disease, the intertubular connective tissue increases and is infiltrated with lymphocytes. As late as ten days after onset Gram negative diplococci have been found.

The Hagner technique is as follows: Under a general anaesthetic, the junction of the globus major with the testicle is defined, the scrotum is made taut and a vertical incision about two inches in length is made through the skin down to the tunica vaginalis. If an accompanying inflammatory hydrocele exists which is the rule the tunica vaginalis is opened and the hydrocele fluid allowed to escape. In any event the tunica vaginalis is opened just as in a radical hydrocele operation, then the swollen epididymis with the testicle is

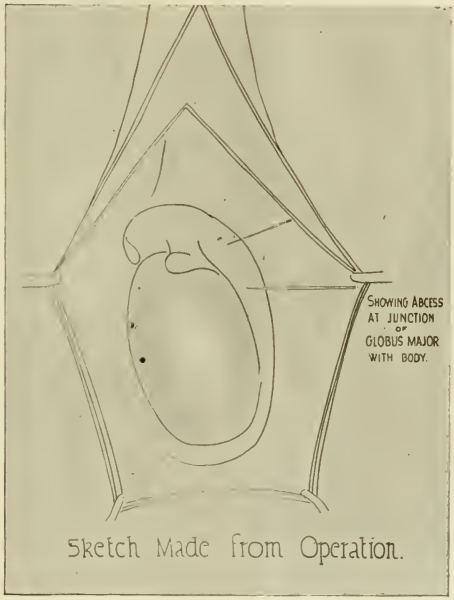

Fig. 6

In the chronic recurrent type the pathological picture is quite different and puncture with drainage in these cases gives most excellent results. Microscopically the covering of the epididymis is very much thickened. Hard and indurated button-like masses are found in, but not always limited to the globus minor. This induration is due to the inflammatory changes in the tubular walls and increase in the intertubular connective tissue. The microscopic demonstration of pus is rare in this type of case.

delivered from the sac. The operator now has the entire epididymis in plain view. As a rule, with close inspection and palpation, the abscess is easily located. Multiple small punctures are made in the covering and penetrating the tissue of the epididymis with the point of a narrow blade scalpel, (preferably a cataract knife). If pus exudes, the incision in the covering of the epididymis is enlarged and the abscess opened with a blunt probe. The cavity may be irrigated or sponged out with a 1/1000 corrosive sublimate solution. If

a definite abscess is not located then the needle is introduced through the puncture holes and the tissue of the epididymis needled, for in this way many foci of infection may be located which would otherwise go unnoticed. Drainage is instituted by means of a soft rubber tube or cigarette drain placed alongside the epididymis. Cunningham's method of closing the wound has proven most satisfactory in my hands which is as follows: Two silk worm gut sutures are passed through skin, dartos and tunica vaginalis and tied over a small piece of rubber tubing which is placed on either side of the wound. The testicles are covered with a sterile dressing and supported by means of a suspensory or a shelf made of adhesive plaster.

I wish to emphasize the application of this plan of treatment to the chronically infected epididymis which has a tendency to "flare up's" after dilitation and treatment is resumed on the posterior urethra. In my experience the gonococcus has been very refractory to treatment in this type of case. If the localized foci of infection are punctured and drained, the discharge grows less, the urine becomes clear and the patient is gonococci free in a comparatively short time.

The above findings are very striking and noticeable in the after treatment of these cases. These are clinical facts which are difficult to understand and which I am at a loss to explain.

It was my privilege to interview Dr. Hagner on this subject a short time ago and it was somewhat of a relief to find that my observations had not been entirely imaginary. Dr. Hagner also gave me this information: that drainage of a chronically inflamed epididymis sometimes clears up a chronic prostatitis which had resisted treatment. He was unable to explain this clinical observation.

This operation is thought by some to be too radical to ever become popular and the "chronic objectors" will set forth two prominent reasons for not operating these cases. First, possible occlusions of the vas epididymis by trauma

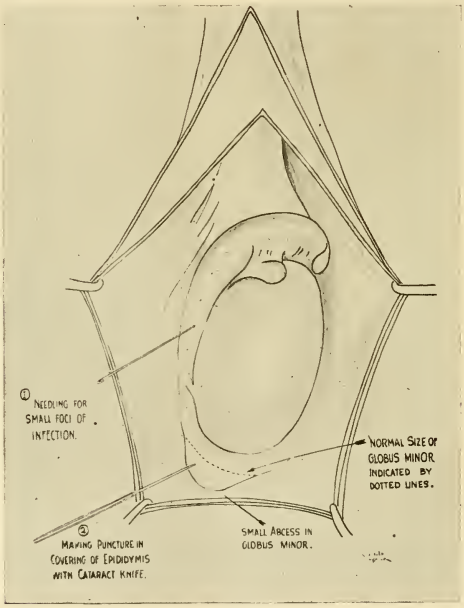
① NEEDLING FOR SMALL FOCI OF INFECTION.
NORMAL SIZE OF GLOBUS MINOR INDICATED BY DOTTED LINES.
② MAKING PUNCTURE IN COVERING OF EPIDIDYMIS WITH CATARACT KNIFE.
SMALL ABCESS IN GLOBUS MINOR.

Fig. 7

or citatrix following operation in bilateral cases. Second, too great publicity given the disease by hospitalization.

My answers to the first is that the gonococcus has "dug in" and you have to use radical means to get rid of him.

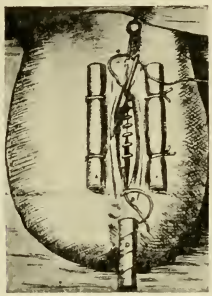

Fig. 8. Manner of Closing the Scrotal Wound

A-A, two rubber tubes over which are tied the silkworm-gut sutures passing through skin, dartos and tunica vaginalis. B, catgut suture uniting the edges of the tunica vaginalis. C, subcutaneous silkworm-gut suture closing the skin wound. D, drainage tube placed along the outer edge of the punctured epididymis.

In the three bilateral cases operated on by me I have been unable to make "follow-up studies" for spermatozoa. In six bilateral cases operated on by Cunningham he was able to demonstrate the spermatozoa in four after operation, two of which have children. Hagner has operated on four cases of bilateral epididymitis,—two had spermatozoa and two were sterile following operation. The two having spermatozoa were operated within three days from the onset of the attack.

A proper confidence instilled into patients by frank and fair dealings will minimize the difficulties confronting us about hospitalization.

The advantages of epididymotomy are (a) immediate relief of pain and reduction of temperature with a fall in the leucocyte count; (b) the comparative easy, ridding the tissues of the gonococcus after drainage in chronic cases; (c) the ability to begin treatment in a compartively short time, with a very much shortened convalescence.

Conclusions.

1. Puncture with drainage of gonorrhoeal epididymitis is based on a definite pathology which can be demonstrated clinically, macroscopically and microscopically.

2. Histo-pathologic studies tend to support the theory that fewer cases of sterility would exist if drainage was instituted and tension relieved in bilateral cases.

3. In the chronic recurrent type of gonorrhoeal epididymitis the gonococcus is easily gotten rid of and the patient freed from the symptoms by drainage of the epididymis. (This feature is not easily understood, but is borne out by clinical evidence.)

4. The open operation with drainage is the most efficient and happiest way to terminate the most troublesome complication of gonorrhoea.

Note: In preparing this paper I am under many obligations to Drs. Hagner and Cunningham for information given me and from the authors from which I have taken cuts to make slides, including Morton, White, and Martin.

Discussions.

Dr. A. J. Crowell, Charlotte, N. C.:

I have observed Dr. McKay's work and am in a position to appreciate it more fully than those who have not seen his work. He had to sell me. I tried the method years ago and gave it up because I did not get the results I thought I should. It was my fault. The operation I did was very crude beside the one Dr. McKay does. He is also more wise in the selection of his cases than I was. He is of the opinion that the best results are obtained in the chronic recurrent type and I believe his judgment is good with regard to this. He certainly has gotten some wonderful results in this class of cases; in fact, so wonderful that I was loath to believe them. I remember one case,—in that of a Greek,—in which the results were very surprising. He had been treating him for probably twelve months and his urine would not clear up at all. Following the operation it cleared up in a week or ten days' time and the patient is apparently well.

I do not see how an old chronic seminal vesiculitis could be benefited by this operation but Dr. McKay seems to think it possible and Dr. Hagner is very much of the opinion that he has seen good results following,—and he is good authority.

Dr. Robert C. Bryan, Richmond, Va.:

I was very much interested in Dr. McKays' excellent presentation of this subject. Those of us who have had the opportunity to do this operation I am sure appreciate the pathology and the immediate relief afforded by draining the male "pus tubes."

Several of the surgeons have spoken of the complications associated with epididymitis and vas deferitis. I have not heard the word seminal vesiculitis used yet. I would like to impress the fact that I do not believe there is a viscus in the body more liable to infection, and more unable to empty its products than the seminal vesicle. When once contaminated it is a genuine harbinger of germs and a pus recess. I don't know a bag of its size in the body that can hold more germs than this seminal vesicle. Like the gall bladder, the outlet gets blocked, is unable to empty itself, there is a retention, and I am sure at times those phenomena which we call rheumatism, chronic systemic infections and septic states are absorption from this organ.

Dr. T. M. Davis, Greenville, S. C.:

One thing Dr. McKay mentioned was hospitalization of patients and using general anesthesia. I do 95% of my epididymotomies in my office under local anesthesia. One-half of one per cent novocaine infiltration of cord structures will give a painless operation. You can do epididymotomies painlessly. There is a certain point I wish to stress. In closing up after you put in the drain, the cord tissues should be shortened. This is evident, because, as you know, the weight of the testicle pulling on the cord and its nerves causes most of the pain, and if you shorten that cord and pull the testicle up, you won't have much trouble keeping it up with the bandage, because you shorten it up, and relieve the pain in this way, regardless of bandage. Another thing I try to do is put a silk-worm gut in the lumen of the vas through the globus minor, putting a needle through first and threading the gut through this, and in that way I try to preserve the patency of the canal. I tie the silk-worm gut to the drain so that when I pull the drain out the silk-worm gut comes out also.

Dr. M. H. Wyman, Columbia, S. C.:

Dr. McKay alluded to the "battles of Bordeaux and Paris." By way of explanation to some of the gentlemen who were not in France, I would like to describe these social fights between temptation and morality. An American soldier walking down the street when the enemy would approach—a very charming enemy high heeled shoes, short skirts, etc.—and the skirmish took place, the encounter followed and then the prophylactic treatment was administered. Should the preventive treatment fail, which it did in only 1%, then resulted infection with possibly epididymitis.

Just one word about epididymitis. In treating gonorrhea one should be serious enough to make a careful inspection of the individual's external genitalia, as a case of acute epididymitis is preventable frequently, by insuring free drainage through a large meatus. Another important preventive measure is early treatment of the posterior urethra. It is in delayed treatment of posterior urethra allowing pus and gonococci to accumulate, and from there go into prostatic ducts, seminal vesicles and epididymis, that trouble comes. Therefore I am heartily in favor of early through and through irrigation of the whole urethra. I usually put a man, irrespective of the 3-glass test, or any other test, on a posterior irrigation within a week. Dr. McKay has certainly presented the surgical treatment of the acute epididymis in a clear, convincing manner. Any doctor, whether paying special attention to venereal diseases or not can apply it in his practice.

One case of mine should be of particular interest to the general practitioner and to the internest. A man presented himself to me with evidence of the result of a focal infection in his knee and foot. His knee was so much involved that he had to use crutches. He was entirely relieved by opening a chronically infected epididymis. Later, of course without crutches, he went into the army and was killed in France.

One of the most distressing complications of any operation within the scrotum is delayed hemorrhage causing a haematoma. Any one that has ever operated upon the scrotum remembers that if he has neglected bleeding inside, how later when he examined his field of operation he found a large swelling in the scrotum. I saw Dr. Young do a

scrotal operation. He was most careful. He waited five or ten minutes, just to be sure all bleeding was checked before he closed the wound.

There have been many papers written on epididymotomy but Dr. McKay has presented certain phases of the matter that have never been gone into before. Any one treating gonorrhea must be prepared also to treat the complications, and I feel sure epididymotomy is the surest, quickest and most satisfactory manner of dealing with epididymitis.

I thank you.

Dr. Hamilton W. McKay, closing:

One of my objects in presenting this paper is the fact that some of our most prominent men do not treat epididymitis in this way. Certainly one of our foremost urologists in a recent discussion of this subject did not advocate the open operation. It shows that there are two schools just as there are two schools in the treatment of lues,—one group uses arsphenamin and the other neo-arsphenamin.

In 60% of these cases we can actually demonstrate gross pus. In the other 40%, if the covering of the epididymis is squeezed, and slides made of the contents, microscopic pus can be demonstrated. Then if there is pus formation, which practically always takes place within four days, incision and drainage should be the treatment. How the drainage of the epididymis in the chronic recurrent type of cases would help rid the tissues of the gonococcus I do not know. I had noticed this by "follow up" studies of cases during after treatment, and it is a clinical fact that is surely true.

I was in Dr. Hagner's clinic a short time ago and he was kind enough to perform his original operation for me, and I interviewed him on the drainage of chronic cases. He brought out the clinical fact that in the chronic recurrent type of cases, drainage gives good results and that it will clear up chronic prostatitis in certain selected cases.

In regard to Dr. Davis' point on local anaesthesia: After a week or ten days this operation, in my experience, is easily done under novocain and can be made an office procedure. The best time to operate on acute cases is from three to five days after onset. It is difficult to make traction on the cord without pain under local anaesthesia, and I believe a general anaesthetic should be used in all acute cases.

I appreciate Dr. Bryan's discussion of seminal-vesiculitis which is always a forerunner in these cases, and is so difficult to treat.

Dr. Cunningham in doing this operation has combined with epididymotomy the Bellfield operation, which probably most of you are familiar with, and I believe this procedure should be carried out in selected cases.

I thank you.

*Read before the Spartanburg meeting of the Tri-State Medical Association, Feb. 16-18, 1921.

THE PRESENT STATUS OF SURGICAL CLEANLINESS.*

By Southgate Leigh, M. D., F. A. C. S.,
Visiting Surgeon and Gynecologist Sarah Leigh Hospital and Clinic.

What is the present status of Surgical Cleanliness, of Asepsis and Antisepsis?

Unsatisfactory, to say the least.

Disappointing to those men who feel that such weighty and vital matters, even though they are simple in their details, should be given that strict attention by the profession which their importance deserves.

Why is it that so many surgical reports still refer to cases of infection? Why is it that, in these modern times, there is scarcely a large hospital which does not report many cases of clean operations followed by infection?

Why do we, not infrequently, hear surgeons, who work in general hospitals, state that they are unable to attempt certain plastic procedures because such cases always get infected?

The situation is a peculiar one. By many, it is simply accepted as a fact, that an occasional case will be infected, and that such an occurrence cannot be prevented. On the other hand, every surgeon will readily admit that the necessary technical details to bring about the proper and uncontaminated healing of clean wounds, are so simple and plain

*Read before the Spartanburg meeting of the Tri-State Medical Association February 16-18, 1921.

that they can be carried out to the letter by people of ordinary intelligence.

Then why should infection ever occur?

Is it not well nigh criminal to permit a perfectly clean wound to become poisoned by outside means, thus jeopardizing the comfort and safety of the patient?

We cannot speak too plainly about these matters, and there is no subject before this or any other gathering of medical men that demands more prompt and more vigorous consideration or action.

The speaker has discussed the situation many times, both publicly and privately, with surgeons from various parts of the country. They, practically all of them, admit the unfortunate situation, but seem to be resigned to the same, and have no suggestions to offer in clearing up the difficulties.

Fortunately for the patient (and this is why the profession has not become more aroused to the situation), the infections are usually mild, and while they may mar the results of the operations, and prolong the time of recovery, with consequent increase in discomfort and suffering, yet at times severe and dangerous infections do occur, and may happen when least expected.

The great trouble is that surgery appears so much easier than formerly, so many more men are attempting to do it, and the details of surgical cleanliness are so simple, that they are being overlooked, neglected or left too much to subordinates, who are frequently irresponsible.

The great importance of antisepsis is more deeply realized by men who began their surgical careers in the days when chemical antiseptics were largely employed and extreme attention to all details were essential in order to obtain clean healing wounds. In those days we had to consider everything around us as carrying infection, and had to wage a constant and relentless warfare against wound contamination. But the results were substantially as good as those of today.

The profession as a whole pays but little attention to the history of medicine, and there may not be much practical good derived from such reading. But there is an important exception in the story of the development of asepsis and antisepsis. The fact is that up to the time of Lister, and indeed until his teachings had been generally adopted, patients were much better off outside of hospitals than in them, those institutions being veritable nestbeds for all kinds of fearful infections. The antiseptic methods suggested by Lister could with propriety be used nowadays in those institutions where, on the part of some careless members of our profession, there is an utter disregard of common sense especially in the handling of infectious materials and discharges.

It is an outrage on professional decency for operators or assistants to throw soiled sponges about the operating room, or to permit septic discharges to soil the tables and floors. Such materials must be promptly collected and immediately destroyed, or rendered harmless by effective means.

Operators, assistants and nurses commit a similar breach of surgical decorum, when they allow their ungloved hands to come in contact with purulent discharges, either in the operating rooms or in the wards. Any parts of tables, beds or floors, soiled by septic discharges, must be immediately treated with strong antiseptic solutions.

A familiarity with the history of the development of cleanliness in surgery, and especially the early struggles of Lister in England, Volkman in Germany, and Gerster, Marcy, Keen and others in this country, with the heroic measures taken by them, would be especially useful to the present-day surgeon who is inclined to think too lightly of antisepsis. In studying the record of those days he will become usefully impressed with the fact that we still have today the same infections around us, and that they may at any time "break out" and cause fatal trouble, unless we are constantly alert.

As stated in former papers, the author is frankly of the opinion that surgical cleanliness has not in the past three or four years gone forward, but probably backward.

If this is correct, it is inexcusable, and especially in view of the fact that all up-to-date hospitals now have complete laboratories, which can and should make frequent and thorough tests of the operating rooms, instruments, dressings and workers.

The principal cause of infections comes from the fact that the operator does not assume full responsibility for the training and watching of the operating room staff. In many large institutions this is difficult and yet the matter is one of such vital importance that safe arrangements should be made.

In former years, in nearly every prominent hospital, in the surgical department there was one dominant figure, whose standing and influence was so strong as to enable him to direct the policy of the work, even to minor details.

Today, however, we have in each such institution, many good and safe surgeons, with no one man as the leader.

The solution of the difficulty lies in standardization, a work through which the American College of Surgeons has already accomplished much. The surgeons of each hospital should, and must, get together and take vigorous steps to overcome every obstacle in the way whether institutional or professional, and absolutely control and safeguard the surgical cleanliness of the operating room and wards, any careless member of the staff being vigorously disciplined if need be.

The ideal plan, as suggested in a former paper, is for each principal operator to have his own operating room and personal staff of nurses and doctors. Even then he must not only give them most thorough instructions, but must be eternally vigilant, watching each of them and keeping in touch with all preliminary procedures.

One of the most unfortunate situations is where there is a mixed attending staff not associated together and using the same operating room. The assistants are only too prone to follow the careless operators, looking upon the strict ones as cranky and unreasonable.

In instructing nurses nothing appeals more strongly to them than the warning that they themselves may be the next to be operated on.

The Golden Rule should be preached and practiced most widely in all departments of surgical work.

Clean and dirty cases should not be operated on in the same room unless the most extreme precautions are taken to prevent the slightest spread of infection from the dirty cases, as suggested before.

Ungowned persons should be debarred from the operating rooms at all times, and the furniture and fixtures should be as simple and plain as possible.

Gloves are of vital importance, and are probably the source of much infection. Those used in dirty cases must never be used again in clean ones. As a rule the ordinary methods of sterilizing gloves are not sufficient. We would suggest, as an additional safeguard, that the gloved hands be immersed in 1/250 bichloride, and that the hand solutions instead of being water, be 1/3000 bichloride, to be used from time to time during the operation.

This brings us naturally to the question of antiseptics. It is practically impossible to do surgical work without the use of chemical antiseptics. The profession has been gradually getting away from these useful agents, even in treating infected wounds, but the experiences of the Great War brought this tendency to a sudden halt, and opened the eyes of the surgeon to the necessity and the harmlessness of these useful agents. Bichloride and carbolic still have an important place in technique, as well as the chlorine antiseptics, which are useful and effective in certain conditions.

If the surgeon is perchance forced to operate amid uncertain surroundings, it will be well for him to use antiseptics more freely, even to the bathing of "clean" wounds with antiseptic solutions.

We must, all of us, constantly bear in mind the importance of the strict carrying out of the details of surgical cleanliness, watch and instruct our assistants at frequent intervals, remember always the dangers that may appear at any time from carelessness or inattention, and realize fully that the most brilliantly performed operation may be ruined and the patient's life jeopardized by even a slight error in technique.

Very much more could be said about this most interesting, neglected and all important subject, but that would entail a repetition of former papers.

Our object on this occasion is to bring the matter forcibly to your attention with the hope that your interest may be aroused and co-operation enlisted.

SOME REMARKS REGARDING THE THYROID.

By K D. Graves, M. D.,
Lewis-Gale Hospital, Roanoke, Va.

As is well known, pathological functional abnormalities of the thyroid gland may be divided into two classes—hyposecretion and hypersecretion. A great deal of work has been done in an effort to remedy these conditions. Just why one thyroid gland produces too much secretion, another too little, is not known. Many theories have been advanced, but we are apparently as much in ignorance concerning it as ever. Certain changes take place in the thyroid tissues, but why?

A tremendous step towards remedying thyroid deficiency was taken when Kendall isolated thyroxin, the active principle, of the thyroid secretion. This is a white crystalline iodine compound which may be made, not only by extraction from the gland tissue, but synthetically as well. One milligram of this drug, when administraed to a normal 150-pound adult is said to increase the metabolic rate about two per cent.

At present, probably the most common, as well as most satisfactory, form of treatment of hyperthyroid cases is by the knife. These cases, however, are often bad risks from the surgical standpoint, and an attempt was made, especially by Beebe and others to produce a serum which would destroy the gland tissue. This was prepared by making an emulsion of the gland tissue, precipitating it with acetic acid, and injecting this precipitate, or nucleo-proteid, as he then called it, into animals. It was found that their serum, when injected into other animals, would destroy thyroid gland tissue; but unfortunately it would also produce degenerative changes in other organs as well, as the liver, spleen, and kidneys.

I wish to take this occasion to make a preliminary report on a small series of experiments I have conducted on guinea pigs. The problems I wished to work out were:

1. What is the fatal dose? Is this dose consistently the same?

2. Is it possible to cause symptoms of hyperthyroidism in guinea pigs?

3. Do animals receive an active immunity by repeated injections of thyroxin?

4. Is it possible to confer passive immunity on other animals by an injection of immune serum?

In the following experiments, injections made intraperitoneally, it was found that upon the injection of approximately 1 mgm., or more, of thyroxin pigs were killed in eight to twelve hours. One-half mgm. made pigs sick, but they recovered. Those receiving one mgm., or more, became sick in about four hours; staggering gait, very nervous, squealing when one touched them, respiration shallow, the pigs panting a short time before death; heart beat indistinct and very rapid.

A pig given gradually increasing doses a week apart, beginning with 0.5 mgm. until at the end of four weeks he received four mgm. Pig lived and remained active but became markedly emaciated.

Fourteen days after last injection his serum was drawn off; and used in the following test; eight pigs were given 2mgm. thyroxin apiece and at the same time four were given 2 c.c. apiece of the above serum. Those receiving the serum lived, and were apparently not injured by the thyroxin; those which did not receive the serum died in from eight to twelve hours, with the above mentioned symptoms. Autopsies showed the heart dilated containing a chocolate red clot, and a few c.c. of blood tinged fluid in the peritoneal cavity; but no other lesions.

An attempt was next made to determine the period of immunity conferred by the serum. Two weeks after injecting 2 c.c. serum a pig received 2 mgm. thyroxin, without ill effects. Two pigs were then injected with the serum ½ hour and 2½ hours, respectively, after receiving 2 mgm. thyroxin. The first pig died 12 hours after receiving the thyroxin, the other 8 hours after receiving it.

Since the thyroxin has to be dissolved in NaOH before using, Dr. Kendall suggested, in a personal communication, that it was possible that this would cause the death of the pigs, rather than the thyroxin. This would hardly seem to be the case, however, since the pigs

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receiving the serum also received the same amount of thyroxin as the others. Nevertheless a pig was injected with 2 c.c. of 1% NaOH the same amount the others received without ill effects.

I do not wish to be construed as making any extravagant claims for this serum. I merely wish to present the report of a small series of experiments which appear at this time to present interesting possibilities. If there be such a thing as anti-thyroxin serum which is certainly open to question in the light of our present knowledge, I feel that it is probably the serum here described.

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OCULAR CAUSES OF FATIGUE.

By Emory Hill, M. D., Richmond, Va.

A normal heart works twelve hours out of the twenty-four. Its systole about equals its diastole and the heart muscle rests as much as it works; yet the heart is considered a busy organ. Two eyes capable of useful vision work every second of waking life by means of a combination of two intrinsic muscles and six pairs of extrinsic muscles, requiring a co-ordination as delicate as any in the human body. The most remarkable thing about our eyes is the constant performance of their function without fatigue in so many individuals. Given eyes without errors of refraction, with normal muscle balance and good muscle power, especially in the internal recti and their associated muscles of convergence, one will seldom be fatigued from any amount of eye work he may care to do. Exceptions to this rule occur when the eye work is very excessive together with mental concentration, bad light, sedentary life and lack of sleep, and when the muscular system is below par as a result of severe or prolonged illness. It is possible to get tired from the overuse of normal eyes, but in reality this seldom happens. Tired eyes may be classed in three categories. The familiar term "eye strain" is synonymous with errors of refraction, in the majority of cases hyperopia with astigmatism. Few eyes conform to the standard type of emmetropia, and practically we deal with errors of refraction when patients present symptoms referable to the eyes; in other words we are concerned to relieve the excessive labor of the intrinsic eye muscles. This is not our only task, however; the extrinsic muscles must be considered. The relation of the optic axes may be abnormal whether or not errors of refraction exist and the power of the extrinsic muscles, especially those entering into the essential act of converging the optic axes to fix a near object, may be deficient. Thus, what may be termed the static and the dynamic conditions of the extraocular muscles concern us in the solution of ocular fatigue.

Errors of refraction, muscle imbalance, and deficient muscle power, constitute the three types of eye defect giving rise to fatigue. Certain bodily conditions also contribute powerfully to fatigue in using defective eyes.

Errors of refraction: The ideal eye is one so constructed optically that rays of light from distant objects fall upon the retina without any muscular act on the part of the eye being necessary to refract these rays. In other words, the eye has distinct distant vision in a state of rest. Near vision is then accomplished by contraction of the ciliary muscle, the intrinsic muscles of accommodation, which alters the shape of the crystalline lens so that it refracts more strongly the very divergent rays coming from a near object and brings these rays to a focus on the retina. This is a normal and comfortable muscular act and not fatiguing. Few eyes realize this ideal. The most frequent departure is the hyperopic or short eye in which accommodative effort on the part of the ciliary muscle is constantly necessary, and near vision calls for an excessively great contraction of this muscle. The opposite type of eye, the myopic, demands less than the normal accommodative effort,

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and is less subject to fatigue. Unfortunately, however, the myopic, or nearsighted, eye is a pathologic eye, inherently weak and liable to increasing damage with age. Moreover, myopic and hyperopic eyes are usually astigmatic, and this difference in the refraction of different meridians of an eye, known as astigmatism, is a source of constant and unnatural effort of the ciliary muscle which causes the local and distant symptoms referable to eye strain. The presence or absence of these symptoms depends upon the amount of defect in the eye, the amount of eye work done by the individual, the general physique of the individual, and to a large degree his nervous organization. I know of no rule to measure the amount of discomfort to be expected from a given error of refraction. Some people are tortured by a seemingly trivial astigmatism; others go through life with exceedingly abnormal eyes and are perfectly comfortable. To what extent reflex nervous symptoms from small errors of refraction in Americans indicate wrong modes of living or a neurotic race or a fondness for shell-rimmed spectacles, is an interesting subject for speculation. It is a fact that we are more given to wearing glasses than any other people. Whether this is the cause or effect of the greater skill in refraction work and in the mechanics of the optical trade which America unquestionably possesses will bear discussion.

The correction of errors of refraction is a matter of mathematical accuracy, and almost uniformly successful results are possible. That they are not obtained is the fault of doctor or patient. Failure to use drugs in sufficient quantity to paralyse the ciliary muscle temporarily while the estimation of the refraction is being made renders accuracy impossible in young individuals. Failure to evaluate properly the connection between the symptoms in a given patient and the eye condition present means disappointment. Glasses will not relieve constipation or cure migraine or do away with intolerable economic or domestic conditions which harass a sensitive nervous system. Lack of real knowledge of the physical condition of a patient by the eye specialist in one or two brief visits may cause failure. Intimate co-operation with family physician, internist, neurologist, surgeon or pediatrician is often essential to successful advice in regard to the eyes. The patient who regards a refraction as an easy job requiring a few minutes is likely to waste his time and money, and the patient who demands immediate relief from a muscular spasm of years' duration, and discards his glasses in disgust after an hour's trial, is the despair of the eye doctor. That inaccurate refraction suffices to make many patients comfortable is a matter of every-day observation. Inaccurate refraction is not justified on this account any more than the routine administration of a dose of salts is warranted for abdominal pain just because many patients survive the dose of salts. Certainty in refraction means the use of atropine in all children and some adults, homatropine in most adults up to the age of 50 and sometimes beyond. Spasm of accommodation is not infrequent in middle aged people. The simple mydriatics, like cocaine and euphthalmin, are required in older people. The unreasoning fear of mydriatic drugs because they may do harm in glaucoma ought not to require any mention in an intelligent medical audience. From two to four visits are desirable before completing a refraction and prescribing glasses, and every patient who is given glasses should be asked to report within two or three weeks for observation if this is possible. Such a routine is necessary if one is to be certain that he is relieving fatigue symptoms due to errors of refraction. I dwell upon these details because the public and profession are not yet educated to regard the estimation of refraction as a scientific piece of work. We do not give glasses simply to improve vision. We give glasses to correct definite departures from the emmetropic state of refraction. Our purpose is to render the eye plus the lens placed before it an emmetropic instrument, or for convenience to leave it slightly hyperopic. We correct completely the astigmatism of the eye and thus do away with the chief cause of fatigue in using the eye. Inaccurate refraction with partial correction of the astigmatism often gives more discomfort than no correction at all. Exactness in refraction is altogether possible and the public is entitled to it.

Muscle Balance. The ideal relation-

ship between the axes of the two eyes is one of parallelism when fixed upon distant objects. This condition is known as orthophoria. Binocular single vision is then easily obtained if the visual power of each eye is good. This ideal may exist likewise for near vision if the lateral and vertical muscles function harmoniously. Departures from the condition of orthophoria usually are found, but such departures are generally consistent with comfort, and when they occur in the subjects of ocular fatigue the correction of the errors of refraction suffices to restore a sufficient approximation to the orthophoric state to relieve all discomfort. This fact is readily understood if one bears in mind that the chief muscular functions of the eyes, both the function of accommodation and that of convergence, are presided over by the third cranial nerve. The relief of the excessive demand upon the ciliary muscles obviates the tendency to over-function on the part of the extrinsic eye muscles. The fundamental consideration is always the refractive condition of the eyes, and accurate refraction has done away with a great part of the muscle surgery and the prescribing of prisms which characterized the crude ophthalmology of the past. The occasional necessity for attention to the ocular muscles independent of refraction arises from the fact that a few individuals have muscle anomalies not at all related to refraction. Either no error of refraction exists, or its correction does not give relief from symptoms. In such cases a hyperphoria, one eye looking higher than the other, is a likely cause of the discomfort. A partial correction of this by means of a prism, base up or down, enables the eyes to focus without undue effort. It is exceedingly important that the muscle balance be tested at the reading distance as well as at 20 feet, for the harmonious relationship of the eye muscles at the reading distance is of more importance than the relationship for far distances. An exophoria or outward deviation, at the near point, is a source of fatigue sometimes requiring the use of prisms with bases towards the nose to relieve the necessity of excessive convergence. These two muscle difficulties, hyperphoria and exophoria at the near point, illustrate the desirability of making routine muscle tests in every refraction case. One cannot know beforehand what individual will come in the category of exceptional cases in which the muscle anomaly must be corrected regardless of the refraction. It should never be forgotten, however, that the vast majority of eyes take care of their muscle defects as soon as their errors of refraction are accurately corrected, and the frequency of our use of prisms and tenotomies of the eye muscles is in inverse ratio to the carefulness of our refraction.

Muscle Power. Practically the power of the extrinsic eye muscles to maintain the contraction necessary for comfortable eye work is a question of the ability of the muscles of convergence to keep the two eyes fixed upon an object near by, as a book, without becoming fatigued. This is mainly a function of the internal recti. They show fatigue when a great amount of steady close work is demanded and when the general system is below par as a result of illness. The college student and the stenographer who have lived an outdoor life previously to beginning their indoor occupation offer frequent examples of this type of fatigue. As is the case with the consideration of the static condition of the eye muscles so in the case of the dynamics of the eye muscles, errors of refraction are the chief source of muscle derangement, and exact correction of the errors of refraction is of prime importance; but certain individuals are unable to do comfortable near work for any length of time until their convergence power is increased. A convenient rule, though by no means infallible, is that convergence power must be three times as great as divergence in order for close work to be comfortable. This convergence power can usually be obtained readily by a systematic exercise of weak muscles, either with or without prisms. The results of such exercise are exceedingly gratifying.

Conclusions.

Fatigue is a frequent symptom in individuals who have to use defective eyes, and the possible ocular origin of fatigue should be borne in mind. This symptom demands not only the utmost care in correcting errors of refraction, but routine study of the eye muscles, both as to their static condition and their dynamics.

The present unsatisfactory status of this work can be remedied by serious attention to the problem by the ophthalmologist and the general physician. The eyes should be thought of early and not late as a likely source of fatigue symptoms; the eyes should be examined thoroughly, and more than once, with the aid of a cycloplegic drug sufficient for the individual case. Every eye case must be regarded as a possible exception to the rule and the extrinsic muscles should be tested in the event that they prove to be the source of fatigue rather than the refractive condition.

The possibility and the practicability of exactness in the correction of eye defects should be realized by all of us and insisted upon as an obligation to our patients. The intimate relation between defective eyes and other fatigue-producing bodily conditions should also be recognized, so that repeated changes in glasses will be avoided when in reality the source of fatigue is elsewhere than in the eyes.

THE ELECTROCARDIOGRAPHIC STUDIES IN DIAGNOSIS.*

By Douglas VanderHoof, A. M., M. D.,
Richmond, Va.

The electrocardiograph is an instrument of precision for registering the action current generated by the contraction of the heart muscle.

Simply described, it consists of a powerful electro-magnet between the poles of which is suspended a very delicate string or fibre, made of quartz and covered with gold or silver. The diameter of the string is from 1.5 to 3.5 microns; its length is about 13 centimeters.

The string being so fine, it is necessary to have some arrangement by which its movements may be registered. As a consequence an arc light is utilized to illuminate this tiny string and by a system of lenses the light is focused on the string. By means of a projection microscope the image is thrown on a photographic film which moves at a constant speed, which when developed gives the electrocardiogram.

In order to understand the nature of the electrocardiogram it is necessary to keep continually before the mind that such curves and tracings obtained by the electrocardiograph are accurate time records of the contracting heart, and as such the records must be interpreted. The instrument yields most information in the arrhythmias, and in this field the knowledge gained is accurate and fundamental. The effort is frequently made to cause the instrument to tell of specific pathological conditions in the heart, such as valve lesions, etc., but so far this has met with ill success.

The most frequent question that one is asked is why does not an hypertrophied heart give an electrocardiogram proportional in size to its enlargement. The answer to this is understood when one remembers the gross anatomy of the heart. It should be recalled that the embryonic heart is a tube, and during development that it is gradually folded upon itself in such a way as to make the four chambers and their orifices. In the folding process, muscle fibres become criss-crossed, thinned in some places, thickened in others, and form altogether a very complex arrangement. Now, the galvanometer will do only one thing and that is to tell the difference in potential (voltage, if you please) between any two points; and so the electrocardiograph will show at any instant of the cardiac cycle the voltage of cardiac muscles then contracting. The electrocardiogram is, therefore, a resultant voltage curve of cardiac muscles during the cardiac cycle.

The different waves that go to make up an electrocardiogram are called, as you probably know, P, Q, R, S, T, U, and lettered in the order of their occurrence. Considered separately, as to what these waves are ascribed: The P wave is caused by the contraction of the auricles, the contraction being initiated at the sino-auricular node and spreading over the auricles. The impulse is transmitted through the bundle of His and spreads to the two ventricles causing ventricular contraction. The time required for the transmission of this impulse in normal hearts is from .16 to .21 seconds. This interval of time is called the P-R interval and represents the conduction time.

In the analysis of electrocardiograms the conduction time gives evidence of the patency of this auriculo-ventricular pathway, or of damage to this bundle of

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His, simply from the measurement of this interval. The interval may be altered temporarily by fever and by certain drugs, notably digitalis, in addition to its change in organic disease.

Following the P wave, the Q, R, S group occurs. These waves are caused by the ventricular contraction, and of the three excursions, the R is the most important; its direction, whether up or down, indicates the preponderance of the right or left ventricle. The height of the ventricular excursion indicates, according to some workers, the force of the cardiac contraction. However, this point is unsettled and does not seem sound, as the heart of a frog with ventricles empty of fluid may in contraction produce excursions 4 to 5 cm. high, whereas when pumping blood normally the ventricular excursion is not more than 1 cm. The Q-R-S interval has been said to be an index of the condition of the arborization of the neuro-muscular bundle in the ventricles, and a prolongation of this time means damage to the arborization of the conducting paths.

The T wave is the one about which least is known and there is no proof that gives a definite cause for it. Lewis states that it is usually positive, i. e., upright, but it may be negative, or inverted, in electrocardiograms of healthy subjects. Digitalis causes a change in its sign (from positive to negative) and this change occurs when the heart is thoroughly digitalized. The sign is an excellent one for gaugng digitalis therapy. A negative (inverted) T wave in the so-called second lead, provided the patient is not digitalized, indicates serious myocardial disease and a most unfavorable prognosis. The U deflection is sometimes seen in electrocardiograms of slow heart rates and to it no significance is attached, as it occurs for the most part in normal individuals.

Electrocardiograms are obtained from three positions, namely from right arm to left arm, called Lead I; from right arm to left leg, called Lead II; from left arm to left leg, called Lead III. These three leads, or derivations, give certain information when considered collectively. It is not necessary from a mathematical point of view to take three leads, as given any two leads the third can be constructed. Such, however, is tedious and it is much simpler to take the three leads.

Briefly considered, the things that are quickly determined by the electrocardiograph are variations in rhythm and rate, such as paroxysmal tachycardia, sinus arrhythmia, ventricular rhythm or nodal rhythm, auricular flutter, auricular filbrillation, heart-block, the various forms of extra systoles and their foci of origin, tripling or coupling of the heart beat, etc. In addition, good evidence is secured of localized or widespread myocardial disease, together with evidence of preponderance of the right or left ventricle.

Is the electrocardiograph essential in the diagnosis and treatment of heart disease? Perhaps this question can best be answered by an analogy to the use of the Roentgen ray in its influence on diagnosis and treatment. Given a case of fractured long bone in the leg the surgeon can diagnose the fracture and apply proper treatment without the use of the X-ray but it is a comfort to the surgeon to demonstrate the fracture and to satisfy himself that the ends of the broken bone have been properly approximated. Given also, a typical case of uncomplicated duodenal ulcer with its history of hunger pain and food relief, the diagnosis can usually be made from the symptoms alone and appropriate treatment outlined. Yet the physician is better satisfied if the X-ray examination confirms the clinical features of the case, and the patient more readily consents to adopt proper treatment.

So it is with the electrocardiograph. Most instances of heart disease can be correctly diagnosed and properly treated on the basis of a careful history and physical examination. How much better this can be done, however, is already indicated by the analogy to the use of the X-ray mentioned above. In addition, we are already indebted to electrocardiography for the correct explanation of certain problems in cardiac function, and we may anticipate further benefits. These have to do with such matters as the forms of the electrocardiogram, voltage as the expression of function of the cardiac musculature, volume output of auricles and ventricles, etc.

Lastly, familiarity with the principles of electro-cardiography and the ability to interpret electrocardiograms are great stimuli to clinical observation and correlation. The application of

graphic methods to the study of any physiological or pathological process may be expected not only to solve problems that have hitherto been unexplained but also to serve as a fundamental check on our clinical studies.†

† Foot Note: The author's paper was illustrated by lantern slides of normal and abnormal electrocardiograms.

CARDINAL PRINCIPLES IN CARDIOLOGICAL DIAGNOSIS.

By William Porter, Richmond, Va.

For many years, since Laennec's discoveries, the sounds of the heart and the murmurs produced at the several orifices have received extraordinarily minute attention. They have been divided and subdivided; they have been written of from this standpoint and that—though chiefly from the standpoint of the cause of the sounds. More recently methods of percussion have undergone a similar intensive study; more recently and in greater array, special instruments have been devised including sphygmographs, polygraphs, electrocardiographs, sphygmomanometers, and special stethoscopes. From those who have employed these instruments has streamed forth a prodigious amount of writing. During the last few decades an eager search for the new has piled up a mass of detailed knowledge; the mass has been growing in geometric progression. The day has long since gone when a general student of medicine could keep pace with contemporary writing; he is now faced with an extraordinary medley of statements simple, simply abstruse, and technically abstruse of which it is no longer possible for any one individual to judge or test the accuracy. Today hypothesis has run riot. A very great deal of the work, a very great deal of thinking, has from the standpoint of the sciences been conspicuously slipshod. To judge the true from the false, the important from the inconsequent, tries the faculties even of those who pursue a limited sphere of study.

There arrives a time when an attempt must be made to sift the wreckage—a time when it is expedient to assess values.

In discussing problems of diagnosis, certain questions recur. Of the more prevalent ideas some appear to me no longer acceptable; a few of the more prominent I propose to discuss, using them as illustrations of my general theme. But the main object of my paper is to point out what may be regarded as essential, not in research work upon the heart, but in the routine handling of unselected cases. To simplify my subject I shall confine myself to dealing only with chronic maladies of the more common type for if we can devise a system for the satisfactory handling of these, we shall have accomplished the major part of our work.

The question physicians are most frequently asked to answer in regard to cardiac cases is this: "Is there organic disease?" The answer must be, "Yes" or "No." The issue seems clear—is there structural change? But the issue is NOT clear nor is it useful; on the contrary it is mischievous. If in diagnosis the cases are divided into two groups—Organic or Functional, according as there is or is not structural change, this division and its meaning will not be respected, for the answer is interpreted—Serious or Trivial. "It never has been shown nor will be shown that all instances of structural change in the heart are serious; it never has been shown nor will be shown that affections in which the heart is suspect, but which are accompanied by no evidence of structural disease are of trivial import. If there is no structural disease of the heart it is usually true that the disturbance of the heart is not serious, but that does not mean that the malady from which the patient suffers is not serious—it may be extremely serious. The heart is a very susceptible index of health and maladies which in the past have been regarded widely as trivial, though primarily cardiac, are almost certainly not primarily cardiac maladies, but, as a rule, disturbances of the heart secondary to disease elsewhere. At least three-fourths of all cases classed as "Cardiacs" are not primarily cardiac at all."

The heart has gathered to itself almost exclusive attention while clear signs of disease in other organs of the body have been entirely overlooked. He

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is a wise patient who cares little whether he has structural change, provided he feels fit, and his prospects for health are good. When we see a scar on a leg or an arm, we ask whether the muscular activity is impaired; so, when we find the signs over the heart which may indicate a scar in the heart, it behooves us to inquire how normally the heart does its work. The important consideration is not the evidence of scar but the evidence of disturbed function. It will be perceived that I have in mind the systolic murmur and its significance. I suggest that one who still uses this phenomenon as a guide in diagnosis and prognosis, examine a number of healthy young men after a few minutes of violent exercise. He will find that the healthy heart is not so noisless in its movements as he had thought, and will be persuaded that systolic murmurs, soft, harsh, or conducted are natural phenomena when the heart is accelerated. The other side of the picture shows men who are genuinely distressed when they exert themselves, but who present no cardiac signs other than those of a supposed functional condition. These are often dealt with casually, and do not receive the careful investigation commensurate with the degree of their functional disability.

If one reviews a text book on general medicine he will find diseases of the heart classified. There are four conditions that stand out in the minds of the authors. They are "Aortic stenosis," "Aortic incompetence," "Mitral stenosis," and "Mitral incompetence." Inquire what cases are in the wards of a hospital, and if there are serious heart cases, these are the conditions most frequently named. To such classification there is this objection,—that it is impossible to conceive from the term "Mitral stenosis" whether the patient is capable of engaging in his everyday occupation, or whether he lies moribund. Many intelligent physicians are so misled by these terms that they come to regard the presence of two such conditions as constituting a double disease. The terms "Double aortic" and "Double mitral" are sufficiently common to bear witness to this tendency. The presence or absence of stenosis in a case which shows aortic regurgitation, is certainly not a prime factor, in arriving at the prognosis, or physical status of a patient. The misconception is even greater when the mitral valve is in question. Detect mitral stenosis, and you need waste no time inquiring into the question of incompetence; there are far more serious matters to weigh.

Speaking quite broadly there are two valvular lesions which should be recognized; they are mitral stenosis and aortic regurgitation. To diagnose aortic stenosis in the absence of regurgitation is outside the province of the majority, it is for every one a hazardous undertaking. To recognize aortic stenosis when incompetence is known to exist, or to recognize mitral incompetence when stenosis is known to exist adds nothing to our sum of useful information. It gives us little or no aid in prognosis. Speaking quite broadly, of chronic affections of the cardiac valves, mitral stenosis and aortic incompetency represent the real pathological lesions found at the autopsy table.

The importance of these diseases of the aortic and mitral valves is to be emphasized from a second viewpoint. The diagnosis carries conviction of an inflammatory or degenerative lesion of the heart muscle. It is safe to assume that when the lesions exist the muscle of the heart is in greater or lesser degree faulty as result of the same process causing the lesion. Few cardiac phenomena present such valuable collateral information, in that most cardiac signs are merely hints of possible local mischief.

The subject of cardiac diseases having grown inordinately in complexity, and the landmarks having vanished, it behooves the practicing physician to adopt a simple yet comprehensive plan, to fasten upon certain cardinal points, seriously studying their values; and to take these cardinal points as a basis for everyday work, discarding what remains.

Thus I come to what I believe to be five cardinal points in the daily examination of chronic affections of the heart, placing first and foremost:

1. The Symptoms and Signs of Cardiac Failure.—These are constituted by the symptoms which produce distress on exercise, and the three chief ones are fatigue grading up to exhaustion, breathlessness, and pain. In all patients, whether they are the subjects of actual or supposed cardiac disease, a

knowledge of their intolerance of physical work is more than half the battle in arriving at a correct estimate of the case. A knowledge of the body's reaction to exercise in health, in ill health, and in the chief forms of heart disease is of paramount importance. I do not refer to changes in blood pressure and pulse rate; these are of some importance, but those who measure the reaction in this way must inevitably fail to appreciate the essential, which is to know the amount of exertion which must be undergone to provoke DISTRESS. The method is within easy reach of all ,and requires no expensive apparatus. One may have a broad and comprehensive knowledge of electrocardiography, polyography, blood pressure, percussion, and stethoscopic methods, but if he fails to grasp the importance of this point he is not competent to advise or treat cardiac patients. The signs of cardiac failure of the congestive type require no specific description. Cyanosis and venous engorgement as observed in the neck, in the liver, and in the bases of the lungs posteriorly are the most useful phenomena. Distention of the veins in the neck is of particular importance, since it is one of the first manifestations of cardiac failure of the congestive type. It has an added value in that it tells us that the right side of the heart is dilated and failing. The exercise tolerance is never normal, or near normal when these signs exist. When objective signs of failure appear the disease is in an advanced stage.

2. Cardiac Enlargement—The determination of cardiac enlargement, without attempt to differentiate dilatation and hypertrophy is properly placed second in order of importance. If one is able to definitely state that a heart is normal in size, he is safe in saying that the heart in question is not primarily seriously involved; on the other hand a heart which is definitely enlarged, is certainly not a normal one. Time will not permit me to discuss the merits of X-ray or the use of various forms of percussion in determining cardiac enlargement; it suffices to say that palpation ranks first, and the chief reliance is to be placed in the position and character of the maximal apex thrust and the structures it involves.

3. Signs of Valvular Disease—Cardinally these comprise signs of aortic regurgitation, which are obtained as often at the pulse as at the base of the heart; and signs of mitral stenosis, of which but two are valuable, namely, a diastolic thrill in the apical region, and a diastolic rumble of low pitch, audible over the maximal thrust, and best heard, often only heard in a recumbent posture after the heart action has been accelerated by exercise.

4. Fibrillation of Auricles—The presence of fibrillation of the auricles indicates seriously disturbed mechanism. If the heart beats at a rate of 120 or more, or can be induced by any means to beat at such a rate, while the pulse remains irregular, fibrillation is almost certainly present. This test is not exhaustive, but for practical purposes it suffices. The other irregularities, either on account of their rarity, or because their significance in treatment is far less, cannot be regarded as cardinal.

5. Infection—No examination is complete until the question of infection has been duly considered, with reference to the following:

(a) Pallor with demonstrable anemia. This is an ill omen, particularly in diseases of the aortic valves.

(b) Palpable enlargement of the spleen. This is not a sign of engorgement, but usually of active infection; the spleen enlarging as a result of subacute or chronic spleenitis.

(c) Clubbing of the fingers. When slight this is more often accompanied by infective endocarditis than venous engorgement.

(d) Fever, continuous or intermittent.

(e) A regular pulse, constantly over 90 or 100, while the patient is at rest.

(f) Gradual, but steady loss of weight.

When evidence of disease is found its etiology must be considered. It may be of rheumatic, syphilitic, or other infective origin, or the result of senile changes. The determinate etiology will influence prognosis and treatment in no inconsiderable measure.

The above points are to my mind the cardinal ones in the routine study of cardiac patients. Of course one realizes that patients will be encountered who need instrumental examination, a checking up, so to speak, of the bedside impressions; yet all such examinations are

subsidiary to the clinical study based upon the above cardinal points.

It is possible for one to overlook rare cases of auricular flutter, fibrillation associated with block, and paroxysmal tachycardia, but this is rendered improbable by the careful study of the first point, i. e., "The Symptoms and Signs of Cardiac Failure."

Finally, in conclusion, I come to the consideration of the value of exercise tolerance in the diagnosis of an overburdened myocardium. The following every-day rules which I have found to be of general and inestimable value, I present as they came from the pen of Thomas Lewis.

*"A—When there is definite enlargement, or aortic disease, or mitral stenosis, or fibrillation of the auricles, then the safe course for doctor and patient is to attribute any undue distress on exercise to a cardiac lesion.

"B—In young subjects, if there is no such immediate evidence of heart disease as I have named, then a deficient exercise tolerance should rarely, if ever be ascribed primarily to the heart. To this class belong almost all patients who are supposed to be suffering from "heart strain," and a large number of patients incipiently infected with tuberculosis, or chronically infected by pyogenic organisms.

"C—In elderly subjects, if there is no sign of structural disease, but a poor tolerance of exercise, the heart cannot be declared free of disease; on the contrary the heart should be regarded as the probable seat of mischief. It is, of course to this class that many cases of grave angina pectoris belong; but it also comprises many myocardial cases in which the chief symptom is not pain but breathlessness and undue fatigue."

*Thomas Lewis, on "Cardinal Principles in Cardiological Practice."

British Medical Journal, Vol. II, p. 621, Nov. 15, 1919.

SOME HYPOPITUITARY STATES.

By Beverley R. Tucker, M. D.,
Richmond, Va.

My connection with the study of the hypothysis, or the pituitary gland, began in 1914 when Dr. Harvey Cushing suggested to me that I study the relation of pituitary secretion to epilepsy. Since this time I have been able to show not only that there is a group of epileptic cases due to hypo-secretion of the pituitary, but also that several groups of adolescent psychoses are due to pituitary disfunction. In addition I have concluded, to my own satisfaction, at least, that this gland has much, if not most, to do with what we term personality, and is somewhat concerned with human conduct.

In the general consideration of the physiology of the pituitary gland we may say that it has to do with body statue, with sex characteristics, with body hair, with the adolescent change of the youth into the adult, with carbohydrate metabolism, with blood pressure stability and with personality. The anterior lobe has especially to do with "the growth and function of the osseous and genital system,"* blood pressure, pulse rate and mentality. The posterior lobe is especially concerned with carbohydrate metabolism and hence with body fat, with unstriped muscle tone and probably with basal metabolism and blood pressure. The pars intermedia (infundibulum)is considered, physiologically, with the posterior lobe.

Hypopituitary states are best understood when we observe some general classification which discards many doubtful and subsidiary manifestations, thus:

Pre-Adolescent, Anterior Lobe, Under-Secretion:

Bones small including those of head.
Genitals infantile.
Upper incisors enlarged.
Pulse slow.
Body hair absent.
Blood pressure low.
Puberty delayed or absent.
Mentally backward or abnormal as a rule.
Amenorrhoea in the female.
Feminine type pelvis and pubic hair in the male.

Post-Adolescent, Anterior Lobe, Under-Secretion:

Effect on bones unsettled.
Genitals normal.
Mentality usually unaffected.
Teeth may be separated and upper incisors large.
Pulse slow.
Body hair normal.
Blood pressure low or normal.

Male—Pelvis may have feminine tendency.
Female — Menstrual disturbance — scant or irregular menses.

Hyperpituitary States.

Pre-Adolescent, Anterior Lobe, Over-Secretion:
Overgrowth of bones causing giantism.
Masculine type pelvis.
Genitals large.
Body hair increased.
Apathy as a late symptom.
Teeth—Enlarged upper incisors and spaced teeth.
Adolescence usually early.

Post-Adolescent, Anterior Lobe, Over-Secretion:
Acromegaly.
Prognathism (protrusion forward of upper jaw).
Hands spade shaped.
Masculine pelvis.
Genitals large.
Temperamental and verbose.
Spaced teeth.
Increased body hair.

Changes in the posterior secretion need not be divided into pre- and post-adolescent because the posterior lobe (including the infundibulum) does not control the adolescent changes of genital or skeletal growth.

Posterior Lobe, Under-Secretion, Pre- or Post-Adolescent:
Basal metabolism decreased (Englebach).
Sugar tolerance increased.
Blood sugar decreased.
Adiposity increased.
Polyuria.
Polydipsia.
Slow pulse.
Drowsiness.
Perspiration usually scant.
Blood pressure usually low.

In bilobar, or whole gland, conditions we have a combination of the changes given for the anterior and posterior lobes. When a patient comes exhibiting any of the changes mentioned we endeavor to get his clinical type by determining whether anterior or posterior lobe manifestations predominate, or whether both seem equally affected. Our clinical observations may be aided by tests for sugar tolerance and by blood sugar estimation. We also have recourse to radiography as a check on our clinical findings. Radiographs of the extremities may show certain changes in the epiphyses and bones, especially the phalanges. Radiographs of the sella turcica are extremely valuable. In hyperpituitarism the sella is large, the clinoids wide apart, and the dorsum sellae and clinoids smooth. In hypopituitarism the clinoids usually tend to bridge across the sella and the posterior processes are massive or clubbed and the dorsum sellae is rough. The size of the sinuses and the thickness of the skull also have a bearing on dyspituitarism.

Some of the **less frankly hypopituitary states** may now be considered.

Acromegaly. In 1886 P. Maire first described two cases and Collins in 1892 reported 90 cases collected from literature. The disease appears usually between the ages of 18 and 30 years.

The subjective symptomatology is that of headaches of intense persistent and deep-seated character. The organs of special sense may be affected; muscular weakness is the rule; some mental sluggishness is present; fatigue and irritability are commonly found. Amenorrhoea and sterility in women and impotence in men are present.

The objective symptomatology shows marked hyperplasia of the bony parts, especially the zygoma, superciliary ridge, the jaw bones, hands and feet and the teeth are widely spaced. The soft tissues are enlarged; the skin and mucous membranes are markedly thickened and puffy; the nose, lips, tongue, uvula, scalp and sometimes the ears and nails are increased in size and thickness; the hair is thick, coarse and dry; the complexion is sallow; the perspiration is free; the hands are "spade like" in shape; speech is thick and voluminous. Polyuria, glycosuria, polydipsia and excessive appetite are frequent symptoms.

The writer has felt that acromegalic symptoms seem to indicate a post-adolescent **over** activity of the anterior lobe and an **under** activity of the posterior lobe of the gland, or at least a mixed or perverted secretion of the two lobes.

Pituitary Headaches—These are deep seated, bitemporal headaches, the location of which are frequently described by the patient with the gesture of putting the forefingers to the temples and pointing them toward each other. They may be transient or continuous. The patient may feel as if a marble, or some object, is moving about at the base of

his cranium. Pardee described these headaches in 1919. At times the sella turcica is constricted, or the gland may swell and stretch the capsule and pressure may even be exerted upon the cavernous sinus. The headache usually ceases upon the feeding of whole gland pituitary extract. These headaches not infrequently follow some infectious disease, and may be due to a toxic condition or inflammatory congestion of the gland.

Diabetes Incipidus—Barker and others have called attention to the relation of the syndrome of polydipsia and polyuria to under-secretion of the pituitary gland. These symptoms are usually relieved by administration of daily hypodermics of pituitary liquid. Pituitary whole gland extract by mouth has been used but is not generally considered satisfactory.

Dysmenorrhoea and scanty menstruation are frequently relieved by the administration of whole gland pituitary extract, or of pituitrin which is a preparation of the posterior lobe, which seems to be especially efficacious in conjunction with the administration of ovarian extract.

Constipation due to paretic bowel walls is helped by the administration of posterior lobe or whole gland pituitary gland extract, as is also bladder inertia.

The more frankly hypopituitary preadolescent states may be manifested by:

Obesity which should be treated, after a pituitary diagnosis is established, by careful pituitary feeding, usually of the whole gland, often combined with either thyroid or ovarian therapy. Pure pituitary obesity gives a rounded contour over the pelvic girdle while ovarian obesity is marked by trochanter obesity. Under the heading of pituitary obesity my be placed the condition known as adiposis doulourosa which occurs during post adolescence and is characterized by deposits of rolls and cakes of fat which are painful upon pressure.

Backward mentality is, at times, dependent upon an under-secretion of the pituitary and these patients frequently become much brighter, better behaved, more developed physically and less lazy upon proper pituitary feeding.

Backward genital development usually accompanied by obesity will improve, before adolescence, on anterior lobe pituitary feeding. Those patients having a lack of pubic and body hair and very small genitals are known as cases of adiposo dystrophia genitalis.

Amenorrhoea and delayed menstrual onset may occur as a symptom of hypopituitarism and be relieved by pituitary feedings. As a rule the best results are obtained with the anterior lobe extract, especially in pre-adolescent cases, because of the lack of genital development.

Reversion of sex characteristics: Pituitary under-secretion in the male beginning before adolescence may give the characteristics of high voice, feminine distribution of body hair, wide pelvis and enlarged breasts. Frequently the beard is absent or scane. These males maye be, but are usually not, sexual perverts. Wanderlust, truancy and other irregularities of conduct are at times observed.

Epileptic Pituitary States—Convulsions in connection with pituitary tumors were described by Cushing previous to a study I published in 1914 entitled, "The Role of the Pituitary Gland in Epilepsy." In this study it was found that convulsions in no way distinguishable from those of idiopathic epilepsy, occur from under-secretion of the pituitary gland. To make the diagnosis of pituitary epilepsy three essentials must be borne in mind.

First. The convulsions must make their appearance during the period of adolescence.

Second. The case must present clinical evidence of hypopituitarism.

Third. Radiographic evidence of pituitary under-secretion, consisting of a small or encroached upon sella showing massive posterior clinoid or bridging or approximating processes or roughened posterior wall of the sella, must be present.

When the diagnosis is established the cases usually respond remarkably to pituitary feeding and I have at least four of these patients who have not had a convulsion for over five years.

These cases may be either static—the convulsions appearing in individuals who were hypopituitary before puberty or transitional cases occuring in those who did not show previous evidence of hypopituitarism. As a rule whole gland pituitary extract, in doses from 6 to 12 grains a day, is administered. Occasionally, especially if the blood pressure

is not lowered, or if puberty is delayed the anterior lobe is most effective.

Eneurisis due to weak bladder walls, especially if the child shows other hypopituitary symptoms, may be controlled by whole gland pituitary extract feeding, or the administration of pituitrin.

The psychoses of hypopituitarism usually occur during adolescence and may be preceded by a pre-adolescent hyper, normal or hypopituitary state. During adolescence, frequently due to illness or injury, a marked diminution of pituitary secretion takes place and the patient has so much psychomotor retardation that the condition resembles dementia praecox. Repetitoin of the movement is common, as is drowsiness, slovenliness and inability to concentrate attention. Some patients show truancy, wanderlust, bizarre behavior and at times hallucinations. This subject was more fully treated by me in a paper entitled "Pituitary Disturbance in Its Relation to the Psychoses of Adolescence."*

Dwarfism in its pure state (not including achondroplasia) is probably due to a small sella and hence limited pituitary secretion. It does not seem markedly affected by pituitary feeding.

In administering pituitary extract clinical manifestations are our only guide and must be determinative in our decision which lobe to administer or whether to give the whole gland. As a general rule acute conditions, as polyuria, respond best to liquid pituitary extract subcutaneously, while the gland extract tablet is best for continuous administration and for cases not under constant observation.

In consideration of all abnormal pituitary states we should not forget that the gland must not be considered alone and that, for instance, the sugar disturbance of pituitary states is related to, and may be confused with, the carbohydrate metabolism of the pancreas. We know that the posterior lobe secretion has to do with blood pressure, but this must also be considered with the state of the suprarenal glands, and of the cardiovascular apparatus. Body hair distribution is partly a pituitary function but the suprarenals and the gonads are also concerned with hair distribution. The pituitary helps to regulate body growth, but so does the pineal gland. We should remember that both pituitary and thyroid states have to do with moist or dry skin, oily or dry hair, loss and gain of weight and nervous poise. Much confusion disappears, however, if we can satisfy ourselves by clinical and radiographic evidence that the pituitary is the gland paramountly affected.

The Role of the Pituitary Gland in Personality—It is not at all difficult to pick out the grosser pituitary types of personality from among our personal acquaintances and from many literary and historical characters. The authors who have been most adept in their description of characters have intuitively recognized these types; so have artists for that matter. This subject is a broad one and only a few instances may be mentioned. Dickens made Mr. Pickwick a hypopituitary case and made him act as only that type could act, while Crookshanks drew him as a hypopituitary type in the only way he could have been drawn. Shakespeare gives an example of this type in Falstaff. Esau, who gives away his birthright for one meal, and begs nothing of his father, and goes independently to make his living in his own way by combatting with other hairy animals, is an example of hyperpituitarism. He would never have served seven years and then seven more, for any Rachael, and the writer of this striking biblical story wisely made Jacob the server and Esau the primitive man. St. Gaudens made a statue of Lincoln which has been criticised because of its ungainliness—still it is the real Lincoln, the hyperpituitary Lincoln, and the Lincoln who today is honored as a man in the South as well as in the North. On the stage the villain—the persistent pursuer, is played as a large, raw-boned, more or less fearless man of the decided hyperpituitary type, while the butcher's comic boy and the heroes good natured friend are jolly, obese and effeminate. In every day life we expect the large boned hairy man to be aggressive, and the fat effeminate one to be affable and jocular. We do not expect the masculine angular woman to stay at home, cater to her husband and rear a large family of children, nor do we expect a stout maternal woman to believe in the suppression of childbirth, or to be an aggressive business woman.

It may be, that because of a transitional increase in pituitary secretion during adolescence, many girls become

"rashly importunate" and that, for the same reason, many estimable men "sow their wild oats" at this age. Fortunately, most of them, when adolescence is established, get their pituitary adjustment, but some do not and their continued increase of libido may be due more to their physiologically upset pituitary glands than to voluntary immorality.

If any one should doubt the importance and potency of the pituitary secretion let him consider the fact that a few drops of pituitrin will precipitate the birth of a human being into the world by expulsion from an inert uterus and that this gland, if disordered, may add not one, but many, cubits to the stature of a man and create a giant, or, on the other hand, take away that stature he should have and make a dwarf; it may steal a man's manhood and render him feminine or deprive a female of her womanly attractions and make her masculine; it may throw one down unconscious in a fit, or rob one's mind of the reason and judgment that raises him above the lower animals; and it may still do other things which at present we wot not of.

In closing I may say that the study of the pituitary gland has added much to our knowledge and understanding; that there is much yet to learn from the further study of this gland; that we are led into many interesting fields when we contemplate the possible role the pituitary plays in human life; and, lastly that the pituitary gland, by virtue of its already known functions, by its being the most protected organ in the human body and by its role of changing the youth into the adult, is a gland that must attract the serious attention not only of the scientist and clinician, but of the sociologist and the lawyer, the author and the artist, the thinker and the doer in this complex world of ours.

*William Englebach, Endocrinology, Vol. LV, No. 3, July-September, 1920, pg. 349.

†Journal of the American Medical Association, August 3, 1918.

*Read before the Tri-State Medical Associatin at the Spartanburg Meeting, Feb. 16-18, 1921.

DISEASES OF THE SUPERIOR MEDIASTINUM*

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The superior mediastinum may be defined as that portion of the thoracic cavity bounded anteriorly by the manubrium, posteriorly by the first four thoracic vertebrae, above by the outlet of the thorax at the first ribs, below by a plane running from the junction of the manubrium and the gladiolus to a disc between the fourth and fifth thoracic vertebrae, and laterally by two planes passing from the sides of the manubrium to the sides of the first four thoracic vertebrae, against which imaginary planes rest the mediastinal pleurae.

The contents of the superior mediastinum enclosed in this limited area are certain anatomical structures upon whose physiological integrity the function of nearly all the intrathoracic and abdominal organs depends, including the heart, the lungs, the liver, the spleen, the kidneys and the digestive organs. It is for this reason that a brief consideration of the main anatomical structures which lie in or traverse that portion of the thorax bounded above, and their physiology must be reviewed before considering diseases of the superior medisastinum. For, although it is customary in considering these diseases, whether medical or surgical, to exclude those of the esophagus, trachea, and great vessels, such as aneurysms, etc., still on account of the limited space and their close anatomical relationship, the symptoms and physical signs of what is commonly called mediastinitis as a rule become significant in direct relation to pressure upon and consequent mal-function of these structures.

The superior mediastinum contains the esophagus, trachea, thoracic duct, numerous lymphatics and lymph nodes, the aorta, the innominate, left common carotid, and left subclavian arteries; the superior vena cava and its tributaries, the innominate veins, the azygos and its tributaries; the remains of the thymus gland, and at times the thyroid; the phrenic, pneumogastric, left recurrent

*Read before the Tri-State Medical Association at the Spartanburg meeting, February, 1921.

laryngeal, and the sympathetic nerves.

The significance of many diseases of the mediastinum such a lipomas, dermoid cysts, etc., depends, as just stated, at times, entirely on their pressure effects on the structures just named, and conversely we must depend to no little extent on pressure signs and symptoms in making a diagnosis of diseases of the superior, or indeed any other portion of the mediaastinum. It is not necessary to call to mind the function of the esophagus, the trachea, the thoracic duct, or the main blood vessels. In regard to the lymph nodes we must bear in mind that their afferent lymphatics come directly from the pulmonary and other thoracic structures, and that in addition they have direct afferent lymphatics from the nodes lying on top of the diaphragm, which in turn communicate directly through the diaphragm with the intra-abdominal nodes lying under the diaphragm. The inevitable result must be a frequent involvement of the peribronchial and peritracheal lymph nodes in any inflammatory or infectious diseases of the chest, such as tuberculosis, pneumonia, or influenza; and a not infrequent involvement in inflammatory or infectious processes below the diaphragm, such as peritonitis, appendicitis, etc.

The majority of post mortems that I personally have been able to witness on the bodies of those who have died of intrathoracic diseases, have been on men dying of pneumonia in the epidemics of 1917 and 1918. In practically all of these we found involvement of the peribronchial and peritracheal lymph nodes, and frequently abscesses.

The phrenic, pneumogastric, and recurrent laryngeal branch of the left pneumogastric, and sympathetic nerves particularly invite our attention. The phrenic nerves interest us here chiefly on account of their control of the diaphragm. Although the lower intercostals supply the outer portion of the diaphragm, still the main motor supply comes through the phrenics. Pressure upon either phrenic may, therefore, cause spasm of, or partial or complete paralysis of that portion of the diaphragm which it supplies.

The main trunk of the pneumogastric after giving off its thoracic branches, penetrates the diaphragm, sending branches to the stomach, left to the anterior wall, and right to the posterior wall, also to the subsidiary plexuses supplying the spleen, the pancreas, the intestines, the suprarenal bodies, the kidneys, and the liver. The intrathoracic branches of the pneumogastric of interest, on account of the possible effects of pressure, are the cardiac, the pulmonary, and the left recurrent laryngeal. There are undoubtedly other minor functions of the cardiac branches, but the most important is the well known action as a pace maker.

Briefly its functions are motor to the esophagus, stomach, intestines, bronchial musculature, inhibitory to the heart, secretory and sensory to the gastric and pancreatic glands.

The method of action of the sympathetic nervous system on the heart is slightly problematical. That of the vagus is established beyond a question. One of the most interesting functions of its pulmonary branches is their trophic action, pressure paralysis causing vagus pneumonia.

The effects of pressure from diseases of the mediastinum may, therefore, be listed as follows:

Pain—This pain may be acute, agonizing from nerve irritation, and, like many other nerve pains, localized at the site of irritation, or referred to some more distant point; or the pain may be dull, boring in character from bone pressure. It is not to be forgotten, however, that extensive pathology may occur in the superior mediastinum, even with erosion of bone, without any pain whatsoever.

The effects upon the respiratory apparatus may be dyspnoea, constant or paroxysmal, slowing of respiration, cough, dry or productive, hemoptysis, asthmatic attacks, atelectasis, atrophy, erosion, bronchitis, pneumonia.

The effects upon the cardio-vascular system may be inequality of pulse, localized coldness, unilateral swelling, or serous accumulations in the pleural cavity, on account of pressure on the superior azygos, dilatation of the superficial thoracic vessels, displacement of the great vessels, or the heart itself. Edematous conditions below the diaphragm are rarely, if ever, due to pressure conditions in the superior mediastinum, except from pressure on the thoracic duct, or in those cases when the pressure is great enough to so embar-

rass cardiac action from displacement as to cause general edema. This, however, occurs sufficiently often to of itself necessitate surgical interference, as in dermoids, lipomas, and other benign tumors.

Dysphagia is to be expected in pressure on the esophagus.

Accumulations of chyle in the pleural cavity, or peritoneal cavity, or chyluria, or, as mentioned above, edema below the diaphragm occur from pressure on the thoracic duct, as also does rapid wasting.

Pressure on the sympathetic nerves may cause pain, dyspnoea, cardiac embarrassment, inequality of pupils, affecting especially the left, which may be dilated or fixed in contraction, depending on whether the sympathetic is irritated or paralyzed, and unilateral sweating.

Hiccup may occur either reflexly, from irritation of the vagus, or more directly from irritation of the phrenic. Further pressure upon the phrenic may, as mentioned above, cause paralysis of the diaphragm.

Pressure upon the left recurrent laryngeal may cause hoarseness, aphonia, stridor, brassy cough, and defective vocalization. In fact, in total paralysis of the recurrent laryngeal the attempt at phonation may be more or less abortive. The pressure on the surrounding soft parts or bones may, of course, be sufficient to cause erosion and local bulging.

The methods of study of the mediastinum include the usual history taking, inspection, palpation, percussion, auscultation, roentgenology, blood examinations, and needling. Needling is dangerous and only to be done to differentiate echinococcus cysts, dermoids, and abscesses, when we are sure of the presence of one or the other. Evidence to be revealed by these methods of study need not be further elaborated at this point, except to emphasize the tremendous importance of considering during the course of our studies the effects of posture, of movements of the arms and head, and of inspiration and expiration on pressure signs and symptoms. For example, dyspnoea from pressure on the trachea may be present only in the dorsal decubitus; paroxysmal cough may occur only when lying on the left side; venous engorgements may be present in one position and no other. A reversed distension of the external jugulars, that is an inspiratory distension, may be present in only one posture, a venous hum heard over the manubrium with the head stretched far backward is said to indicate pressure on the left innominate vein from tracheo-bronchial tumors, tubercular glands, etc. Personally I do not consider this murmur of any value except as corroberative evidence, it can be produced too often in healthy individuals.

Gower's "vagal attacks," syncope, vomiting, symmetric coldness of the extremities, and disturbances of the cardiac rate, rhythm and force may depend entirely on posture.

So much for the pressure effects of diseases of the superior mediastinum and their methods of study.

As stated above, the term mediastinitis is not generally used to include diseases of the esophagus, trachea, or great vessels, but only to include new growths, and acute or chronic inflammatory conditions in the lymph nodes or the mediastinal frame work. In the presence of symptoms or signs pointing to abnormal pressure conditions within the superior mediastinum, the thyroid and thymus glands must always be borne in mind, the latter particularly in children.

It is interesting to note that Pemberton in an analysis of 4,006 thyroidectomies done at the Mayo Clinic states that 542 of these cases were substernal, that is going down into the superior mediastinum, and 25 entirely intrathoracic.

In early infancy particularly, the enlarged thymus may attain sufficient size to cause local bulging, and pressure signs or symptoms, the gland attaining perhaps four times its normal size, and reaching down far enough to overlap the base of the heart.

The diseases of the superior mediastinum may be classified as simple acute, chronic, suppurative, mediastinal lymphadenitis, and mediastinal neoplasms.

Simple acute mediastinitis is rare and its recognition very difficult, at least until fibrous overgrowths or suppuration make the clinical picture definite. Until one or the other of these two conditions produces definite traction or pressure effects we must depend for a diagnosis upon the rise of temperature,

leukocytosis, acceleration of pulse, substernal and interscapular pain. The physical signs are too vague to be relied upon.

Chronic mediastinitis on the other hand presents less difficulty, giving definite pressure signs, or symptoms and physical signs sufficiently graphic to make its recognition relatively easy, and it is chiefly my belief that chronic mediastinitis, especially syphilitic, occurs more frequently than has been the previous teaching, that led me to present this paper at this time. Speaking for myself only I believe that we have missed too often four pathological conditions in the superior mediastinum: 1, tubercular adenopathies; 2, intrathoracic thyroids; 3, abscesses, the epidemics of 1917 and 1918 taught us that these abscesses are not infrequent, and that in properly drained empyemas the explanation of prolonged fever is frequently here; 4, syphilis, occurring either as a true gumma, or as a more ill defined mottled deposit. The three cases that I report briefly below have to do with syphilitic mediastinitis, and I recall losing a case six years ago that came to my office in a condition of profound emaciation and weakness, with a bulging mass to the right of the manubrium, which I took to be an aneurysm, but which turned out to be a huge gumma. The correct diagnosis should have been made months before.

The most common factor in chronic mediastinitis is syphilis. Of course, a chronic syphilitic mediastinitis may exist for a long time without becoming clinically significant. It will only be discovered after it has, by traction or pressure interfered with the esophagus, thoracic duct, respiratory apparatus, cardio-vascular system or nerves contained within the superior mediastinum sufficiently to lead our studies in this direction.

Suppurative mediastinitis may occur as the result of the invasion of pus organisms in consequence of trauma, or infectious processes anywhere within the thoracic cavity, or septic processes in the abdomen, or in other infectious diseases such as measles, erysipelas, typhoid, etc.

Your attention is again invited to the afferent lymphatics to the tracheal, and bronchial lymph nodes.

Qnoting directly from DaCosta:

The physical signs of mediastinal suppuration are notoriously untrustworthy, being quite negative in small deep-seated lesions. However, in a large abscess of the anterior or superior mediastinum inspection not infrequently detects a dusky, hot, fluctuating and sometimes pulsating swelling in the sternal region, while exceptionally actual pointing of the pus through the chest wall is observed. The cardiac impulse is enfeebled and dislocated in relation to the size and situation of the purulent collection. On palpation tenderness over the sternum is elicited, and the local peculiarities of the swelling are appreciated; in some instances there is a paradoxic pulse. Percussion may demonstrate undue upward and lateral extension of cardiac dullness, and also, in a large abscess of the superior mediastinum, a dull area between the scapulae on either side of the spine. Evidence of mediastinal pressure (for a description of which see above) arise, should the situation and character of the abscess be such as to crowd the important vessels, nerves, and other organs of the mediastinum. Such symptoms are, as a rule, not so conspicuous in abscess as in mediastinal neoplasm.

Mediastinal lymphadenitis may be simple or suppurative.

Simple adenitis is very common, occurring in practically all broncho-pulmonary inflammations or infections, and clearing up along with the primary disease. It is almost constant in pulmonary tuberculosis.

Suppurative lymphadenitis is generally tubercular. Its significance depends on its course. Liquefaction with absorption and calcification may occur, or pus may burrow inwards to some adjacent structure, such as the esophagus or a bronchus, or outwards to the surface. Physical signs may be very definite, local bulging with fluctuation, dullness on percussion over and along the edges of the manubrium, with feeble voice and breath sounds. On the contrary, large lymph nodes prior to liquefaction, along the trachea or large bronchi, may act as excellent conductors of both voice and breath sounds. Pressure signs or symptoms are frequently found, and depend upon the structures involved. Such as paroxysmal cough, dyspnoea, hoarseness, ve-

nous turgescence, etc. In all such cases percussion may bring on a paroxysm of violent coughing, especially if there is irritation of the phrenic nerve.

Mediastinal neoplasms may be benign or malignant. The ordinary benign tumors are dermoid cysts, fibromas, and lipomas. It is astonishing to what size benign tumors may attain without producing marked symptoms. All sorts of freak cases have been reported, such as a large dermoid unsuspected until the patient in a paroxysm of coughing brings up a mass of matted hair. In this case the X-ray showed a large tumor in which teeth could be demonstrated. Another remarkable case complained only of some dyspnoea after exertion, a rather trifling cough, and insignificant pain in her right side. The tumor was diagnosed and on removal measured 8.8 by 7.6 by 4 inches. To it were attached four other dermoids, one the size of a hen's egg. The total weight was approximately six pounds. This patient after several operations recovered. Another case is reported in which at post mortem a lipoma extending from the superior mediastinum downwards in front of the heart into the thorax, weighing over 17 pounds was found.

In benign tumors again significance, and pressure effects might almost be called synonymous.

Malignant neoplasms are sarcomatous or carcinomatous. They may be primary or secondary. It has been pointed out frequently that the primary sarcoma of the superior mediastinum is generally a lymphosarcoma, arising from the thymus gland or its remains. Primary carcinoma generally springs from the esophagus, or the bronchopulmonary structures, rather than from the thymus or connective tissue: Secondary sarcomata are generally the sequel of an initial growth in some distant part, while secondary carcinoma develops in the neighborhood of the primary tumor. Sarcoma is more common than carcinoma.

The physical signs relate to the contour of the chest wall and pressure upon the mediastinal contents.

On inspection we may expect anemia, emaciation, local bulging, clubbing of the finger tips, dyspnoea, edema, and tortuosity of the superficial veins, inequality of the pupils, etc.

On palpation we may expect tenderness, systolic pulsation over the tumor, and diminished tactile fremitus and inequality of pulse.

On percussion we find dullness or flatness over the tumor, with possible hyperresonance in its immediate neighborhood.

On auscultation the respiratory murmur is generally suppressed over the tumor, although such tumors if lying against the trachea or large bronchi may increase conduction and intensify voice and breath sounds. Bronchial rales, pleural and pericardial friction sounds, and systolic murmurs due to compression of the aorta and innominate, etc., are audible in certain cases.

Case Reports.

J. H., age 64.

Chief Complaint—Thoracic pain of a dull boring character, dyspnoea on exertion, hoarseness, and cough.

Family History—Negative.

Previous History—Of no significance. Venereal denied.

Examination showed bulging along right edge of manubrium with tenderness on palpation, a heaving impulse rather than an expansile pulsation, edema of the right arm, turgescence of the veins of the right side of the face, neck and upper chest, indicating pressure upon the right innominate rather than the superior vena cava, a systolic bruit and diastolic shock.

Diagnosis—Aneurysm of the ascending portion of the arch of the aorta was made. Wassermann was four plus. The X-ray showed an aneurysmal mass about the size of an ordinary orange.

This patient had not experienced sufficient discomfort to seek advice until a few days before he came to me. Antisyphilitic treatment was undertaken. The symptoms and signs disappeared practically entirely after several months of treatment. The last X-ray showed a small aneurysmal dilatation of the ascending portion of the arch of the aorta.

This case died four years later of softening of the brain without any recurrence of his thoracic symptoms. I am reporting it, therefore, as a case of chronic syphilitic mediastinitis around an aneurysm.

Case 2—White female, age 32, sent to me to be referred to a sanatorium for tuberculosis. Her chief complaint

was persistent cough, dyspnoea and substernal discomfort.

On examination there was a slight elevation of the soft tissues along the left edge of the manubrium, with limited movement of the left chest in inspiration.

Palpation here was negative but showed enlargement of the cervical and epitrochlear glands.

Percussion easily elicited a widening to the left of the dullness of the great vessel area.

Auscultation showed numerous loud dry rales, generally distributed throughout and confined to the left lung. Wassermann four plus.

On these findings the diagnosis was changed to syphilitic mediastinitis. Under vigorous antisyphilitic treatment the thoracic signs and symptoms disappeared.

Case 3—Colored male, age 44. Chief complaint, asthma with pain in lower axilla. This patient had been under treatment for asthma for about three years, but had gradually gone from bad to worse. He was sent in to be treated for asthma. When he entered my office he was coughing violently, suffering from marked dyspnoea, and wheezing so that it could be heard across the room.

The positive findings on examination were a unilateral emphysema confined to the left lung, and that the wheezing sounds and rales came entirely from the left lung. Widening of the great vessel area to the left. A systolic bruit along the left edge of the manubrium. Bilateral glandular enlargement. Wassermann, four plus. The diagnosis of aneurysm of the descending portion of the arch of the aorta with pressure on the left bronchus was made.

The X-ray showed the presence of an aneurysm, but in addition a shadow spreading from the superior mediastinum in numerous fine branches outwards to the left. Under vigorous antisyphilitic treatment dyspnoea, pain, cough, and asthma were relieved. The wheezing and other signs disappeared so completely that he was able once more to undertake his work as a truck farmer.

Several months later the aneurysm ruptured into the esophagus, and the patient died suddenly. It might properly be commented here, that vigorous antisyphilitic treatment is held by excellent authority to increase the tendency of aneurysms to rupture.

This patient, however, was between "Scylla and Charybdis."

Granting that, as seemed to be the case, the tendency to rupture was increased, he was thoroughly miserable and pauperized if left alone.

These cases have been selected and reported in order to emphasize the importance of syphilis as a factor in chronic mediastinitis.

In conclusion I wish again to state that it is my belief that mediastinal syphilis is more common than is generally supposed. I have seen six such cases in the past year. One of which I am reporting here as coming in for pulmonary tuberculosis, and two of which were referred for treatment for asthma.

I am inferring from my own experience that the search for specific diseases of the superior mediastinum, occurring independently or accompanying aneurysms, will give positive findings more frequently if our search is more careful and thorough.

I am not listing the articles, and books used in preparing this paper, but acknowledge that I have used them freely.

1009 West Franklin St.

BLOOD TRANSFUSION BY THE SODIUM CITRATE METHOD.

By S. S. Gale, M. D., Roanoke, Va.

While the practical application of blood transfusion is comparatively new in the field of surgery, the idea of using blood as a therapeutic measure dates back to 1660 when Lower in his experiments made successful transfusions in lower animals. Blood transfusion is, therefore, of an ancient and honorable origin.

In a paper of this scope one would not be justified in going into the history or a review of the literature covering the field of the development of this subject from 1660 up to the present time. However, for the information of those who may be interested in the historical

*Read before the Tri-State Medical Association, Spartanburg, S. C., Feb. 16-17-18, 1921.

development of this subject, I would refer them to an exhaustive article by Pemberton in "Surgery, Gynecology and Obstetrics," March, 1919, Page 262; also to "Blood Transfusion" by Nelson M. Percy in Ochsner's "Surgical Diagnosis and Treatment," Volume 1, Page 187.

At the present time there are probably three recognized methods of blood transfusion, viz., the indirect method of Percy, the indirect method of von-Ziemssen by means of syringes and canulas, and the sodium citrate method advocated by Lewisohn.

This paper is based on a series of ten cases with a total number of 18 transfusions of which we have given in the Lewis-Gale Hospital since January 1, 1920. There were four males and six females, ages ranging from 8 to 60. The conditions requiring transfusion were hemorrhage following trauma, hemorrhage following removal of adenoids and tonsils, hemorrhage from the stomach, bleeding from the uterus, secondary anemia, pernicious anemia, and aplastic anemia.

The only excuse for presenting this small number of cases before this society is that Pemberton at the Mayo Clinic reports on 1,036 cases, 1,001 of which were done according to this method, and C. V. Hunt, also of the Mayo Clinic, reports another series of 1,400 transfusions done after this method. In reviewing the articles by Pemberton and Hunt, we find that the results in our series of cases, although small, are very similar to those reported by these two authors. We, therefore, feel that our technic has been approximately correct because the results have generally been good.

The indications for blood transfusion are hemorrhage from uterine fibroids, malignant disease, secondary anemia of unknown origin, common duct obstruction with prolonged coagulating time, bleeding duodenal and gastric ulcer, tubal pregnancy, uterine hemorrhage, gun-shot, splenic anemia, leukemia, hemophilia, purpura, hemolitic jaundice, endocarditis, colitis, miliary tuberculosis, actinomycosis, septicemia, etc. To put it another way, the indications for blood transfusion are, first, to replace blood lost as in the acute hemorrhages; second, to stimulate the hematopoietic organs as in the case of pernicious anemia and secondary anemia of long standing; third, to add thromboplastic substances in those cases with prolonged coagulation time.

The method is briefly as follows: Chemically pure sodium citrate in the proportion of nine grains to an ounce of distilled water is sterilized by first boiling the distilled water for ten minutes and then adding the chemically pure citrate to the distilled water and then boiling this solution for two minutes. This solution should be prepared fresh immediately before each transfusion. This makes approximately a two per cent sodium citrate solution. This two per cent solution is used in the proportion of 30 c.c. or 1 oz. to each 250 c.c. of blood, which gives us approximately a solution of 0.2 per cent citrated blood as it is given to the recipient.

The apparatus consists of two glass graduates, preferably graduated in c.c. of a capacity of at least 500 c.c., a glass salvarsan tube of at least 250 c.c. capacity with rubber connections, a piece of rubber tubing one-fourth inch in diameter and four feet in length, several ten-inch pieces of tubing of the same diameter, several Lewisohn-Kaliski 15-gauge needles, a glass stirring rod and a tourniquet. The glassware and tubing are all sterilized by being boiled in distilled water and the needles by carbolizing.

The median bacilic vein in both recipient and donor is used. The arm is prepared by the application of 3½ per cent tincture of iodine over the field of operation, the rest of the arm being covered with sterile towels held in place by towel clips. The tourniquet, which is a piece of rubber tubing, is applied about six inches above the elbow of the donor, holding it with an artery clamp. The tourniquet should be applied tight enough to retard the venous return but not to cut off the arterial circulation. At times it may be necessary to resort to the external juglar vein, or veins in the leg. The vein is held in position by transfixing the upper segment of the vein to the skin with a fine cambric needle. The transfusion needle is then passed into the vein just below the cambric needle which transfixes the vein and holds it steady against the current of blood in the vein. Attached to this needle is a piece of rubber tubing

about ten inches long which directs the flow into the glass graduate which is usually placed on a stool just under the donor's arm, 30 c.c. of sodium citrate solution having been put in the graduate before the blood is allowed to flow. As the blood comes from the donor it is continually stirred by an assistant with a glass stirring rod. After 250 c.c. of blood have run into the graduate, another c.c. of sodium citrate are added and the stirring with the rod continued. The amount of blood ordinarily used at the first transfusion is 500 c.c., and at the second transfusion usually 750 c.c. It is essential that the blood should run from the donor in a steady stream because if it is permitted to come out in drops it is liable to clot. If the blood does not flow in a steady stream, the needle should be removed and a second needle inserted in its place.

After the amount of blood required is removed from the donor, the tourniquet is lightly applied to the recipient's arm and the vein is transfixed in the same manner as previously indicated, the needle being inserted with the blood stream. When the needle has fully entered the lumen of the vein, which can be told by the blood flowing out of the needle, the tourniquet is removed. From the salvarsan tube connected to the needle by a long tubing a small amount of warm normal saline is allowed to enter the vein before the blood is added and given by the gravity method.

The method for determining groups has been the method described by W. V. Brem. It is found that all patients fall into one of four groups, viz., groups 1, 2, 3 and 4; that is, that there are two agglutinins, of which the second group possesses one, the third group the other, the fourth group both and the first group neither, in each case the cells being susceptible only to that agglutinin which does not exist in the individual's own serum. Ten per cent of all persons are in group 1, 40 per cent in group 2, 7 per cent in group 3, and 43 per cent in group 4. Groups 1 and 4 have been called universal groups because of the fact that a group 1 recipient may be safely transfused by any donor, and a group 4 donor is a safe and beneficial one to use for any recipient.

Severe reaction occurs in 100 per cent of cases in which agglutination of the donor's corpuscles takes place. It is, therefore, important that the blood of the donor and of the recipient should be tested to see whether they agglutinate, before the transfusion is given. Of course, if they agglutinate they are not suitable and if such a blood is given it may prove fatal.

In a certain number of cases following transfusion there is a frank postoperative reaction. This is characterized by chills and fever, nausea and vomiting, urticaria and severe headache. These reactions usually occur within an hour after the transfusion. However, in a small number of cases, it may be delayed for from twelve to twenty-four hours. The severity of the chill is variable, at times it lasts but a few minutes, but usually from fifteen to twenty minutes, and sometimes a half hour. The fever varies from 100 to 105. In some cases there is no chill, but there are subjective symptoms such as nausea, vomiting and headache.

If there should be an error in the grouping, viz., a wrong donor being used, that is one whose corpuscles would agglutinate by the recipient's serum, a severe reaction and possibly fatal outcome may develop. In these cases the reaction occurs on the table and always when less than 150 c.c. of the donor's blood has entered the recipient's vein. The reaction in these cases is entirely different from the post-transfusion reactions. They occur very suddenly. The first symptoms are pain in the chest, usually in the precordial area, marked dyspnea, a severe pain in the back, usually in the lumbar region, cyanosis, oedema of the face and eyelids, flushing of the skin of the entire body and often urticarial spots. Pulse rate drops suddenly and very perceptibly. Occasionally there is loss of consciousness with trenchant muscular contractions. There is always nausea and vomiting. All of these patients have severe chills with fever, sometimes as high as 105. Frequently there is blood in the urine. If the transfusion is stopped immediately and before more than 150 c.c. of blood are given, the patient is likely to recover.

In all probability the fatalities occurring following transfusions are due to the agglutination of the donor's corpuscles. The causes of post-transfusion reactions by the sodium citrate method have as yet not been established. Several theories are suggested: first, preparation of the sodium citrate solution; second, incompatibility in the white cellular element and blood platlets; and third, difference in the proteins of the blood. It has been found by Lewisohn that as much as five grams of sodium citrate can be given intravenously to an adult with safety, but that larger amounts are extremely toxic. Using a 0.2 per cent citrated blood, 1,000 c.c. of which contain but two grams of sodium citrate, excludes the possibility of toxicity as a cause for reactions. By using a chemically pure drug the possibility of existing impurities as a cause is readily disposed of. However, it has been found that when the citrate solution is prepared fresh for each transfusion a lower percentage of reactions occur.

It seems that patients suffering from pernicious anemia whose general condition is poor, have a larger percentage of post transfusion reactions than any others. However, these patients after the first transfusion do not have as marked or frequent reactions attending subsequent transfusions, and this incident to reaction diminishes with each subsequent transfusion.

Some exceedingly low percentages of reactions following the whole blood methods of transfusion have appeared in the literature. However, Meleney, Stearns, and others, reviewed two hundred and eighty transfusions done by various methods, which showed 64.8 per cent by the sodium citrate method and 64.4 per cent by the syringe canula method, from which they concluded that the method of transfusion had nothing to do with the production of reaction.

It can be seen from what has been stated above that unless the blood from the donor is suitable, that is, if it does cause agglutination or haemolysis, serious consequences may follow. When possible the donor should have a Wassermann made and, of course, only negative Wassermann donors should be used. The testing of the blood of the donor is comparatively easy and can be learned by any laboratory technician in a short time. The rest of the technic for giving blood transfusions by the sodium citrate method is not more difficult than the administration of salvarsan by the gravity method.

Blood transfusions should be practiced in all hospitals whenever indications arise and, under certain conditions, they may be done in private homes. It is one of the greatest life saving advances made in medicine since the advent of asepsis, and is destined to become as frequently used as saline intravenous infusion in suitable cases, and with far greater success.

This method of transfusion was used in the World War with great success and was the means of saving hundreds of lives. Its application is just as practical and far more reaching in civil surgery than in military surgery.

Original Communications

TARTAR EMETIC IN PARASITIC DISEASES.*

By Edward J. Wood, M. D., D. T. M. (Eng.)
Wilmington, N. C.

There are so few real specifics in medicine that the addition of a new one is a matter of real interest though the application of it may at the time seem rather remote. But when a specific in parasitic diseases is discovered, it becomes a matter of more than passing importance to the State of North Carolina. We are in the habit of overlooking the fact that nearly half of this State lies in the subtropics and that a large portion of this half is warmed by the Gulf Stream. It is only our indifference which limits the number of parasitic diseases to the present few with which we are familiar. How many of us twenty years ago would have believed the possibility of the hook worm exposure or the wonderful result which has accrued from its conquest? Twenty years hence we will look back to this year and be amazed at the complaisant manner in which our transactions made no reference to the fact that in this good year 1921 we had possibly a score of life-sapping animal pests unknown to us. Familiarity has bred contempt and having pasty faces with reduced vitality and general lethargy so continuously with us, like the poor, we have failed to see anything unusual about it. How many of us doing ward work in general hospitals in this state are daily impressed with the cases of profound anaemia. The patients are admitted for other conditions but the anaemia rises up and accuses any honest physician whenever he enters the ward. If he happens to be peculiarly conscientious he asks the intern if the feces have been examined for hook worm and when told that the search has been repeatedly made but without result he feels that his conscience can rest in peace and passes on rapidly. Had he gone a little deeper he would likely have found a high eosinophilia or possibly even an enlarged spleen though not of malaria origin. It is not necessary to visit a general hospital in North Carolina to see this picture for it is much more frequent in the country districts where there are no general hospitals. An automobile trip from the mountains to the seas will serve the purpose admirably. We are asleep, allowing a noble opportunity of service to pass us by. We had to have a stranger come to us in 1902 and show us the hook worm which we as a profession had seen and not perceived since the earliest settlements for as long ago as about 1710 Dr. John Brickell had observed the tallow-faced dirt eaters of Carolina.

The two parasitic conditions in which tartar emetic acts as a specific are the Leishman-Donovan infections commonly known as kala-azar and bilharziosis or schistosomiasis. The drug in conjunction with atoxyl is also used in African trypanosomiasis and is regarded as the most promising form of treatment, but his disease does not concern us directly. In the two former conditions, however, there is every indication that it is only a matter of time before they will be regarded as of first importance.

In 1914 Castellani used tartar emetic with other drugs successfully in a case of Indian kala-azar. The result seemed to justify its routine use. In 1915 Di Christina and Caronia reported the cure of eight cases of infantile kala-azar with antimony. Later Rogers further extended its use in the same disease. To prevent hemolysis Caronia suggested that the strength of the solution be not greater than one per cent. The drug is best given intravenously, though there will always be some to advocate intramuscular injections which, however, should be condemned as the result is painful with a final slough in many cases. The sterilization should not be done in the autoclave but by flowing steam on three successive days. Raising the temperature higher than this would result in decomposition which is

*Read at the Pinehurst meeting of the N. C. Medical Society, April, 1921.

said to render the drug exceedingly toxic.

Recently we ventured the diagnosis of true Indian kala-azar in Wilmington in a man who had never been out of the State. For a long time unexplained splenomegaly with profound secondary anaemia and fever without malarial parasites has caused much diagnositic trouble. This disease is characterized by all of these symptoms to which are added a marked leucopoenia and the presence in the bone marrow and spleen of the Leishman-Donovan bodies which, on rare occasions, may be found in the peripheral blood. Hitherto the treatment of the condition has been entirely without result but now it is definitely proven that tartar emtic is a specific. In the skin type of the disease which is common in South America under the name espundia the local application of an ointment containing the drug will bring about a cure. Since this disease is so easily cured it behooves us to do splenic punctures in our splenomegalies and search the leucocytes for the Leishman-Donovan bodies which are readily stained with eosinate of methylene blue stains.

Plimmer and Thomas were the first to prove experimentally the remarkable power of the antimony salts in the destruction of trypanosomes and today the drug is regarded second only to arsenic in its curative value in trypanosomiasis.

Chronic antimony poisoning has been mistaken for lead poisoning. It causes leucopoenia, low blood pressure, insomnia, dizziness, headaches and pain in muscles or nerves. It is absorbed with greater difficulty than arsenic.

In tropical relapsing fever Salmon has reported moderate success with the use of tartar emetic.

Recently Voegtlin, Smith, Crane, wright and Cornell in the Hygienic Laboratory in Washington have made a most important contribution on the quantitative study of the chemotherapy of arsenic and antimony. They show that differences in toxicity and parasiticidal activity of arsenic and antimony preparations of whatever kind can be explained on the hypothesis that they must be changed to a single type which is the oxide. Without this change no principle toxic action will be excited. Both arsphenamine and neoarsphenamine must be oxidized in the body before acting on parasites. By injecting one-half the minimum effective dose of arsenoxide and one-half the minimum effective dose of antimony lactate the two together prove quite effective while singly no result would follow. They conclude that arsenic and antimony are trypanocidally complementary, an assumption which does not accord with Ehrlich's theory of "chemo-receptor activity." This digression is made to show the trend of the pharmacologic study of this group of protozoal poisons. Its further advance will doubtless add much to the small knowledge of antimony which seems destined to play a large part in the future.

A word is necessary as an introduction before the treatment of schistosomiasis is discussed. The disease is due to a fluke of two species. One is the Schistosomum haematobium which causes the bladder type of infection and is clinically characterized by eggs with a terminal spine and the rectal type due to the Schistosomum mansoni with eggs having a lateral spine. This diagnosis is made in the one instance by urine containing puss and mucus and the specific eggs in an individual usually showing an eosinophilia. The disease manifested by the most varying degrees from that of no symptoms to a high degree of anaemia, prostration and finally degeneracy. In the other type the disease is diagnosed by the finding of the ova in the feces. The symptoms again may be of most varying intensity.

When the British Army occupied Egypt during the War the problem of schistosomiasis was more serious than that of real war. It had been the curse of Egypt since the Earliest record for mummies of the twentieth dynasy show the presence of the ova in the bladder. It is to the credit of the British that the intermediary was discovered and the life history completed. Two snails: planorbis and bullinus, were found to harbor the parasite as it emerges from the urine or the feces and in the snail's liver certain developmental stages were passed until finally discharged into the water in the form of cercariae which swim about on the surface until man enters the water when it attacks his skin, enters, passed to the liver and finally to the portal circulation where the adults pair and finally the eggs reach the respective point of the particular species

and the disease condition manifests itself. Drinking infected water results in the cercariae entering the mucous membrane of the buccal cavity never reaching the stomach where certain destruction awaits in the normal hydrochloric acid.

Recently we have made the diagnosis of schistosomiasis of the haematobium type in four cases. We have much more to do before we are ready to publish this report for there are links in the chain to be added and confirmation by comparison with specimens coming from Europe. We have learned that the necessary snails are all about us and that the disease is prevalent in the West Indies where it was introduced in the slave trade from Africa three centuries ago. As we have the necessary snail why should we not have the disease if it occurs in the West Indies?

Recently Petillo, in Surgery, Gynecology and Obstetrics, impressed by the work of J. B. Christoferson in the Civil Hospital in Khartoum, applied his suggestions to a case of schistosomiasis in this country (originating abroad) with striking results well justifying a careful reading of this paper. Christoferson used one-half grain of tartar emetic in 3 to 4 c.c. of physiological salt solution intravenously every day for a few doses, then every other day. Each dose was increased by one-half grain until 2 to 2½ grains were given. The total dosage was from 20 to 30 grains. The drug kills the parent worms in the portal circulation and sterilizes in situ wherever found. Petillo reports a striking improvement following this technique in a case of bladder infection with the schistosomum haematobium.

APPENDICITIS DIFFICULTIES IN ATYPICAL CASES.

By Dr. C. E. Wilkerson, Randleman, N. C.

Gentlemen of the North Carolina Medical Society:

Today I wish to call your attention briefly to a few of the difficulties arriving at a correct diagnosis in atypical cases of appendicitis. With sudden onset, pain, nausea and vomiting, rise of temperature, tenderness and rigidity over the right lower quadrant we readily conclude appendicitis. But not always so. Those of you who have had years of experience no doubt recall having seen all the above typical symptoms in children who on closer examination are found to have a well developed right lobar pneumonia. So, also, it sometimes becomes difficult to differentiate between acute appendicitis with its atypical manifestations and a beginning typhoid fever. In this connection I beg to recite case No. 1—Mrs. K. was referred to me with a diagnosis of acute appendicitis, having the typical symptoms. At time of operation, which was done during the first twenty-four hours of the attack, to my surprise but slight appendical envolvement was found. The patient made complete recovery after running a typical four-weeks course of typhoid fever.

Appendicitis is sometimes misleading and very often mistakened and confused with trouble in the genito-urinary tract. Or appendicitis may occur on the left side, this being out of the ordinary. Just in this connection and to illustrate how we may confuse this with trouble in the genito-urinary organs and how appendicitis on the left side may lead us from our correct diagnosis, I report case No. 2—Thomas P. was taken with slight pain in the abdomen, some rise of temperature, pain all referred to region of the bladder, with frequent urination. At time of first examination there was practically no symptoms that would lead one to believe he was dealing with a severe appendiceal infection. On the second day pain was still referred to the bladder with slight tenderness and rigidity in the extreme left lower quadrant, at which time a diagnosis of appendicitis was made and immediate operation was advised. This being denied, the patient was seen from time to time, gradually growing worse, till about the fourth day he was removed to hospital, the abdomen hurriedly opened. A large appendiceal abscess was formed low down in the pelvis on the left side. Free drainage was instituted and the patient recovered promptly.

There are certain pelvic conditions found in women that theoretically are easy of differential diagnosis, but in practice offer most difficult and vexing problems. A number of times this year certain of these conditions have con-

*Read before the North Carolina Medical Society meeting, Pinehurst, N. C., April, 1921.

fronted me and have proven to be most puzzling in all of which the chief symptoms were referred to the region of the appendix. Just now I am reminded of Mrs. M., who had been seen by two of our best practitioners who, having made a provisional diagnosis of appendicitis, with a possible rupture, sent her to my place for operation. When first seen by me she was in a state of profound shock with much tenderness over a good portion of the abdomen with its greatest intensity over the region of the appendix. At this time the abdomen was not distended. This patient was not operated immediately, but was placed in Fowler's position and treated expectantly and constantly watched till about the fourth or fifth day there began to rise in the region of the appendix, a mass that was tender and dull on percussion which gradually became larger each day. On the seventh day of her stay in the hospital her abdomen was opened and a large gangrenous ovarian cyst with twisted pedical was hurriedly removed. The patient made a complete recovery and was able to leave the hospital on the fourteenth day. In this patient you will remember the diagnosis of acute appendicitis based upon typical symptoms was made. At time of operation the appendix was found to be perfectly normal.

We are sometimes led to our wits' end to be able to tell accurately whether we are dealing with typical cases of appendicitis with their motley array of every symptom imaginable or gall bladder involvement. Last year a young lady presented herself for treatment, complaining of indigestion and discomfort in the region of the appendix sometimes referred to the gall bladder. For the life of me it was impossible to say just what was the primary trouble. Abdominal section was done at which time the appendix was found attached firmly to the gall bladder.

There are other types of cases which offer difficulties in diagnosis, when in reality there is no pathological condition existing in parts to which symptoms are referred. You sometimes see nervous patients who will give most any kind of symptoms, and since appendectomy has become more or less fashionable, it is possible for good surgeons to arrive at a diagnosis of appendicitis based on over-exaggerated symptoms given by these nervous people. Or there will be others who may have all kinds of trouble and manifest none or but few symptoms till the condition is far advanced. As a striking example I call your attention to case No. 5—A young unmarried colored woman was sent to my place for treatment, giving no symptoms whatever except prolonged menstruation. On first examination it seemed that a divulsion and curettage would be ample to give her complete relief. But after a few days of rest in bed and a more thorough examination, the patient was found to have considerable trouble in the pelvis, but never one time complained of pain nor had rigidity. In fact none of the symptoms were found that we would expect to see with the amount of involvement that existed in that womans' pelvis.

This patient was opened in the median line, two large pus tubes complicated with an appendix nine inches long, one-half inch wide, one-fourth inch thick, red as scarlet, ulcerated from tip to base was found and removed. Yet with all that involvement no one could say from a mere superficial examination that this patient did or did not have appendicitis.

This to my mind illustrated most forcibly the folly of arriving at definite conclusions before the field has been thoroughly scanned and every means at our command have been exhausted to satisfy ourselves of the real conditions that exist in people's bellies before operation is done.

It is my humble opinion, were we to spend more time studying our patients and the pathological conditions that they present before rushing them to the operating room, our successes would be greater, and fewer would be now singing with the angels.

REPORT OF THREE CASES OF INTERESTING BLOOD CONDITIONS.

By Robert L. Felts, M. D., Durham, N. C

Leukemia and other closely allied diseases of the blood attended by lymphoid hyperplasia, are relatively rare and despite the large amount of attention that

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has been given this subject, the etiology of this group of diseases is still unsolved.

According to one view, leukemia is a malignant disease of the blood forming tissues, with an escape of neoplastic cells into the circulating blood, differing from the ordinary neoplasm, in that it has no local origin, but arises from all the tissues belonging to a certain system, i. e., from those which give rise to certain types of white blood cells.

An infectious theory of leukemia is supported by the fact that the acute type of the disease usually runs a course strongly suggesting an acute infection with high fever, prostration, and a hemorrhagic tendency.

A rather interesting and not illogical suggestion by one writer is that since lymphoid tissues are so frequently exposed to the action of bacterial toxins and irritants brought to them in solution from absorptive surfaces of vast extent, and since, in these circumstances, they so often display a definite tendency to respond to irritation by hyperplasia of their cellular constituents, it is not improbable that a like reaction is to be held responsible for the inception of certain types of diseases characterized by overgrowth of lymphoid cells, local or general. If the irritant is withdrawn after the lapse of a reasonable interval of activity of the cellular action in the lymph node ceases, the hyperplastic process ceases. If, however, the irritant continues to act it appears to be inevitable that the cellular response will also continue.

Finally, a time is to be expected at which either as the result of activity of the same irritant, or more probably as the result of the formation of a self-perpetuating toxin, in the lymph node concerned, the reaction is converted into a process characterized by indefinite hyperplasia.

In the absence of a better explanation, this is not an illogical method of accounting for the origin of the lymphosarcomas, and other similar otherwise inexplicable lesions of lymphoid system, including not only certain localized lymphoid hyperplasias, but chronic lymphatic leukemia, pseudo leukemia, and the like.

With this brief introduction of the subject, I wish to report the two following cases of generalized adenapothy, but with very different blood pictures.

Case—J. W. T.: White; male; farmer; age 46. Admitted to hospital on February 22, 1921, with the following history:

F. H.—Father living, and well, age 67. Mother living, poor health. Two brothers and one sister living, and in good health. One brother and one sister died at 19 years, tuberculosis. Patient is married, has six children living and well, two died in infancy.

P. H.—Had usual childhood diseases. Influenza, 1918; rheumatism at 18, again 1902. Present illness began in August, 1919, when he noticed a painless hard swelling in left inguinal region, soon after noticed similar swelling in glands of neck; next, axillary glands became swollen. About one year ago patient became very weak, and heart gave him trouble, with shortness of breath, rapid pulse. Appetite remained good. Bowels regular.

Physical Examination: Fairly well nourished, anemic adult—male, marked oral sepsis, with a few defective teeth. Heart rate rapid, regular blowing systolic murmur at apex, transmitted to left axilla. Systolic pulmonic murmur not transmitted. Heart otherwise negative. Lungs negative. Abdomen negative, except for palpable spleen, well below costal margin. Cervical, axillary and inguinal glands markedly enlarged, easily palpable, fairly firm and discrete. Skin, pale, rather waxy, and lemon tint. Mucous membranes very pale. Eye examination shows mild degree papallitis in both eyes, numerous hemorrhages in both retina. Urinalysis—trace of albumin, many granular casts. Otherwise negative. Kidney function, 53%, Thallein, two hours.

Blood Examination: During stay in hospital red cell count varied from 1,760,000, highest, to $1,320,000, lowest. Hb. 21% to 16%. Leucocyte count on one occasion, 540,000, and another 764,000. Practically all white cells were small lymphocytes. Blood wasserman negative. Patient only remained in hospital a short time.

Diagnosis: Chronic lymphatic leukemia, and mitral insufficiency. No improvement, except perhaps a slight reduction in the size of the glands.

A very interesting situation has arisen since this patient returned home. He has developed small pox, and recov-

ered. His leucocyte count on April 24, was 210,000 glands smaller, and feeling generally better.

Case—J. B. A.: White; male; farmer; age 26. Admitted from the country with a suggested diagnosis of typhoid fever. (His wife had died the day before with that disease.)

Family history, and past history, negative.

Present illness began two weeks ago, with slight pain when swallowing; had pain when chewing, and soreness around lower front teeth; gums tender; has had slight headaches; malaise; chilly sensations; appetite has been good; bowels rather loose.

Physical Examination: Fairly well nourished; slightly anemic. Teeth all bad, gums swollen and bleeding, evidence of general oral sepsis, tonsils slightly enlarged. Chest, harsh respiratory murmur throughout chest; no areas of dullness. Heart, negative. Abdomen, negative, except for slight gurgling in right iliac fossa. Small petechial rash over chest, abdomen and all extremities more pronounced on flexor surfaces. Large purpuric spots on inner surface of left knee. Cervical and inginal glands enlarged. Urinalysis, negative. Blood examination on admission to hospital showed a leucocyte count of 2,400; differential poly. 25%; transitional, 9%; lymphyocytes, 66%. During his stay in hospital his leucocyte count went as low as 1,800, differential remaining relatively the same. The red count on admission was 4,480,000; hb. 90%. The count and hb. went steadily down, reaching 2,400,000, and hb. 40%, before leaving the hospital. The following is a brief review of the progress of this case:

Upon admission we thought we might be dealing with a case of typhoid fever, as his wife had just died of that disease. The patient was running a temperature curve not unlike typhoid, with headache and malaise, and leucopenia, but typhoid was soon ruled out by blood culture and widal, both negative. Blood wasserman was also negative. The enlargement of the cervical glands, it was thought, might be due to the very bad condition of his mouth. Tuberculosis was next considered. While there was no definite physical signs in chest, suggesting tuberculosis, his chest was X-rayed, with a doubtful report of evidence of a chronic tuberculosis process involving both lungs. His larynx was examined by Dr. Fassett, who reported quite a large ulceration, probably malignant; several smears were taken from the larynx, and stained for t. b., with negative results. After a week's observation it was thought that we might be dealing with Hodgkin's disease. One of the glands of his neck was excised, and the following is the report of Dr. Coppridge: "Tissue from lymph node of neck: A malignant growth, probably lympho-sarcoma rapidly growing. The blood vessels show endothelial proliferation with degenation of the capillary walls, much free blood throughout gland." It is frequently a difficult matter to differentiate lympho-sarcoma and Hodgkin's disease. During the last week of his stay in the hospital the patient has been bleeding profusely from his nose and larynx. The patient was allowed to go home upon his urgent request, and he died soon after. Diagnosis: Lympho-sarcomatosis. No improvement.

Case—The third case I have to report is one of anemia, in an infant, born January 24, 1921. The delivery was spontaneous, mother in good health. No antepartum bleeding. Mother has given birth to three other children, all healthy. No abortions, or miscarriages. The baby (female) weighed 8 pounds at birth, was vigorous, and cried lustily. She appeared rather pale, but there was no evidence of loss of blood. Stools were examined for occult blood, with negative findings. Blood was examined at the end of the first week, and showed a leucocyte count of 36,000. Red cells, 1,350,000, and hb. 25%. There were numerous nucleated red cells. The red count fell as low as 1,030,000, and hb. 21%. Then steadily went up, and before leaving the hospital, had gone to 2,000,000, and hb. 35%. The physical examination of this baby revealed only the rather marked pallor of skin and mucous membranes, with a slightly enlarged spleen.

This case bears a rather striking resemblance to von Jaske's anemia, or pseudo leukemia infantum, being characterized by marked reduction in red cell count, with numerous nucleated red cells. A color index corresponding more or less to the reduction in red cells. A moderate degree of leucocytosys and en-

larged spleen, with absence of lymphoid hyperplasia, and finally, a tendency to recover. This baby is now three months old, and has a red count of 3,410,000, hb. 65%, and leucocyte practically normal.

DEFLECTION OF THE SEPTUM AND SUBMUCOUS OPERATION.*

By James M. Parrott, M. D., F. A. C. S.
Kinston, N. C.

One of the most frequent deformities of the nasal cavity is a deflection of the septum. It is found to a more or less degree in almost every adult. It is with great rarity that it causes any trouble. I seriously doubt that it produces symptoms in more than 1% of the cases. It is about the only kind of nasal trouble which produces an affection of the hearing, and I write this knowing that it is the belief of many that nearly all troubles of the nasal cavities sooner or later cause more or less disturbances of the ears. Most of the symptoms caused by deflection of the septum are symptoms which are produced by any form of nasal obstruction.

The indications for the operation are such as would be expected from the symptoms of obstruction. It is my rule to operate when one or more of the following symptoms present themselves: First, impeded breathing when the inferior turbinate bone on the concave side bulges so far to the middle line as to interfere with proper respiration, or when the inferior turbinate bone because of repeated attacks of congestion becomes hypertrophied high and posteriorly, thus presenting the same condition as though it were enlarged in the concavity of the deflection.

Second, headaches and a full heavy feeling between the eyes and the superciliary ridge. This is emphasized by a slight vertigo and its accompanying phenomena. The headaches and other symptoms indicated under this head are properly due in a large measure to the third indication for the operation.

Third, obstruction of the flow from the sinus into the infundibulum, producing sinus symptoms or sinus trouble. In this connection it is interesting to observe that more often than is sometimes realized the lack of proper ventilation of the sinuses causes a vast amount of trouble. This brings to mind Gallenger's two cases, in both of which the patients suffered very severe headache of long standing, and of which they were relieved by a simple opening of the frontal sinus which showed neither pus or signs of suppuration.

Fourth, certain forms of asthma, hay fever symptoms, and neuralgia pains. Prognostically it is well to be on guard in reference to either of these conditions because it is more often than not that a submucous or a correction of the deflection will do no good whatever. The operation should not be done, in my opinion, for either of these symptoms complex until all other causes which may present themselves as being probable have been eliminated. Of course the asthmatic attacks in such cases are due to the points of contact. The hay fever is nothing more nor less than an anomaly. The neuralgia pains are due to lack of ventilation of the sinuses just as was the case in the Gallenger headache patients.

Fifth, a nasal deformity may be of such a character as to demand an operation for its correction, which it may be advisable to precede with a submucous or during which it may be necessary to do a submucuous. Certain ear affections and sometimes chronic pharyngitis may present phases which call for this operation. In both ear conditions and chronic pharyngitis the conditions are brought about because of the semivacuum produced in the back of the nose and up through the eustachian tube in the middle ear by the swift passage of a volume of air through a small space. I have had two or three cases of chronic pharyngitis and middle ear disturbances which have been decidedly benefited by this operation.

Sixth, one of the most interesting phenomena which has presented itself to me is the so-called nasal dysmenorrhea. I have seen one or two cases of painful menstruation which were relieved only by cocainization of the "genital spots" in the nose. It is entirely possible that some cases of dysmenorrhea are produced by a deflected septum, and its removal of course would be of immense benefit to a patient. Brettaner and Mayer have gone so far as to

*Read before the Lenoir County Medical Society, June 24, 1921.

state that dysmenorrhea is caused by nasal deformities such as deflected septum. This operation should not be done under the promise that it would relieve painful menstruation until it has been demonstrated beyond a reasonable doubt that it is the cause of such a gynecological disturbance.

The operation should never be done in the presence of a nasal atrophic condition. This only hastens the full development of a very disagreeable and permanent condition, because when the cartilage is removed it is supplanted with connective tissue which causes a functionless membrane. I can in truth say that I have never been caught napping in this particular; but others have, and every nasal surgeon ought to be very carefully on his guard lest he make a patient already uncomfortable really very miserable.

Coolidge says the operation should be done when the symptoms of obstruction in the nostrils correspond with the deviation and presence of chronic alternating symptoms, and when no other cause can be detected. I think in a few words Coolidge thus has very happily summed up almost all the indications other than gynecological, otological, or pharyngological conditions or sinus symptoms.

I have been very much interested recently in the causes which bring about a deflected septum. It is generally believed that the condition is produced by injuries in almost every case, and in those instances where not produced by injuries, it is caused by infections of the septum. It is rare that I see a case, which, in my judgment, was produced by any trauma. I think that the preponderance of evidence and certainly the logic of the situation is in favor of the theory advanced that because of adenoids in early life, the arch cannot flatten as naturally as it should because its growth to the rear is impaired; therefore it assumes the proportion almost of a Gothic arch in the young adult. This does not permit full development of the vomer and the perpendicular plate of the ethmoid in a straight line; consequently there must be some deviation to one or the other side. Certainly it is possible that there may be a growth in these two points which causes an unusually rapid development and therefore a deviation of the cartilaginous portion of the septum in front. These causes are important from a practical standpoint as well as interesting from a scientific one. Injuries which produce a deviation of the septum cause almost a different kind than those which seem to be produced by the causes which are indicated before.

Before closing I feel constrained to suggest that the operator should be on guard lest he mistake the symptoms of hypertrophy of the turbinates or the temporary enlargement of the erectile tissues of the nose because of irritation or infection from a sinus or ethmoidal cells for deviation or rather for indications for operation on the septum. It is more often the case than an inexperienced one would think that the nasal surgeon believes the symptoms which present themselves to be due to the deflected septum when as a matter of fact they are caused by a suppurative or a non-suppurative flow from the frontal sinus or ethmoidal cells or even from the antra. Every case of deflection should be carefully investigated as to the possibility of these accessory sinus complications, and if they be detected, certainly they should be studied before any operation is done on the septum. I think this precaution is in order for the reason that it is more than probable that the seat of the cause of the symptoms of which the patient complains is due to the sinus and ethmoidal conditions, rather than to the deviation of the spetum. In conclusion let me say this, there is no operation in all surgery which gives more happy results than a submucuous when skillfully done on a patient who really and truly needs it.

REGISTERING EXPECTANT MOTHERS.*

Rose M. Ehrenfeld, R. N.
Director, Bureau of Public Health Nursing and Infant Hygiene.

The story told yesterday at the State Health Officers' Meeting by North Carolina statistics indicates the need of bringing to the attention of the medical profession generally the subject of "Registering Expectant Mothers."

The Rt. Hon. John Burns said: "Give me intelligent motherhood and good

* Read before the North Carolina Medical Society at the Pinehurst meeting, April 25-28, 1921.

pre-natal conditions and I have no doubt of the future of this or any other nation."

The fact that over half the infants' deaths are chargeable to causes antedating birth (therefore not touched by current method in health work of educating the mothers, and only partially reached by prenatal work) is the problem challenging the attention of the public health profession today. It should receive attention from the general medical profession—nurses, welfare workers, teachers and parents, all of whom have a definite obligation to childhood.

Eleven thousand, seven hundred and forty-nine babies under 5 years of age died in North Carolina in 1917 (which was one out of every 6 born); 2,626 from diarrheal diseases (1,456 under one year and 1,170 in their second year). Congenital debility, lack of care, etc., claimed 2,046—most of them during the first month of life. There were 4,672 deaths under two years from diseases largely **preventable** by proper **education** of the **mothers** in the care and feeding; 3,153 stillborn babies, **many** of whom **might have been saved by a reasonable knowledge** of **prenataal hygiene.** "Getting the prenatal message to the mothers" is the point we wish to discuss.

Ours is a rural problem, generally speaking, and adding to the complexity are—

1. The adverse environmental conditions of the rural community.

2. The lack of appreciation of the economic value of human life.

3. The deplorable fact that the need of a veterinarian is more often realized and heeded than the need of a physician. Even so, our consolation is in the fact that the achievement of the 269 largest cities of the United States in attaining a death rate of 87 per 1,000 born alive—as compared with 131 of a few years ago, or even higher, and denoting progress to be proud of—shows that American mothers can be counted on to support physicians, health officers and health agencies in their campaign against infant mortality. In this state it seems to be largely a question of "reaching the folks."

"How can this best be done?" is the question that naturally arises. I believe by the properly trained public health nurse who is the worker (endowed by nature and prepared by training) best fitted to establish a direct relationship with the rural home and personal contact with the mother (who frequently is also an expectant mother) However the field is large and such workers few, leaving the greater part of the state without such service.

Let us consider another contributing factor to our particular problem, viz., midwives—numbering 4,000—ranging in intelligence from the aged, unclean, illiterate and sometimes law-defying negro woman to the intelligent young white mountain man who is carrying on the work of a faithful old mother who for years responded to the emergency calls of her neighbors in the remote mountain section (distant from a doctor) in much the same manner that one would render a neighborly service in case of death.

Taking casually from last year's record of births, I find the following for the month of April: From A____ county, 61 births attended by midwives as compared with 38 by physicians: B____, 46 by midwives and 38 by physicians; B____, 42 by midwives and 20 by physicians; B____, 55 by midwives and 24 by physicians; A____, 42 by midwives and 17 by physicians. Such statistics indicate the need of reaching the midwives, by personal contact, with a message of prenatal hygiene, as well as reaching the home.

An outline of instruction for midwives was submitted some time ago and approved, and a public health nurse-representative of our bureau has been sent into 57 counties of the state where there are no health officers or public health nurses and 899 midwives have been reached in conferences held usually at the court house—sometimes at a school or the railway station. They have responded to a notice from the Bureau of Epidemiology (with which they register) to meet at a given hour and date with a representative of the State Board of Health, who will acquaint them with the laws relating to their practice. The instruction given emphasizes their registration, the registration of births and the use of silver nitrate. A demonstration in use of same is given and those who can write are taught to fill out a birth certificate. After an intermission for lunch the principles of cleanliness and personal hy-

giene are presented. The difference between a normal and an abnormal period of pregnancy is explained and an attempt made to make them feel their responsibility for human life and for the securing of medical attention when indications of abnormalities present themselves. If time permits, preparation for confinement and something of the care of the newborn babe and mother is discussed. (The following from a member of your Medical Society: "I have seen the effects of Miss M____'s work already, as several of the midwives have called me in cases they would ordinarily do; and they seem more anxious to carry out any advice or suggestions which I have to offer, and the spirit of co-operation seems to be better. Keep up the good work and save the mother and baby.") The object of this simple instruction is to discourage midwifery where there is adequate medical service and to make the best of an undesirable service where none better exists. (The following from one of the midwives: "Miss M____, I enjoyed your lecture fine. I could have sit and listened all day. I don't think I have ever heard a better talk on the thing you spoke about and I was glad there was so many present. There was one in my township that did not use the drops for the baby's eyes—also they have been telling their patients that it would put their eyes out. Of course they had not registered before the other day. I had been telling them what was law but it didn't do any good. Now if they don't do accordin' to law I am going to notify you, the State Board of Health.") Accompanying this letter was a list of four expectant mothers.

As many of the physicians know, our Bureau runs a **prenatal registry**, sending to expectant mothers throughout the state, whose names, addresses and approximate dates of confinement are made known to us, a series of **prenatal advisory letters**—intended to supplement advice given by the physician and to help the expectant mother to safeguard her welfare and more intelligently follow instruction of her physician. They are intended to discourage midwifery by emphasizing need of medical supervision during pregnancy and proper medical attention at confinement and have been the means of securing a physician for many patients heretofore employing midwives, as we send to any expectant mother expressing her intention of employing latter a letter on what she should expect of a midwife.

The past year 4,028 expectant mothers were registered and received help. (One of them—typical of the letters received—expresses herself as follows: "When receiving your book on Infant Care I had a baby on the bottle and it was very helpful. Since then I have had another baby and the literature sent has given me many important points I never knew. I am very thankful for the prenatal letters, also thankful to my physician for remembering me when sending you his list of names.")

Of the 4,028 cases reported, nurses have registered the greatest number; physicians next, then patients themselves or members of their family; midwives; industrial workers; registrars and others. Physicians have registered one-seventh of the total number and the following from a physician in the state shows the importance he attaches to a prenatal registry: ("In regard to the work that you are carrying on, I would like to say that I deem it sufficiently important to be incorporated in a law making it compulsory for every woman in North Carolina to report her condition to the Bureau by the fourth month to be advised accordingly. To this end I will be willing to write Dr. R____ or any other letters you deem necessary to carry out above stated program. Below is a list of all my obstetrical cases that I could get the addresses of.") Attached to this letter was a list of 33 expectant mothers.

This letter read to show the degree of co-operation we are receiving from some of the physicians which is certain to make a difference in the maternity and infant mortality of their counties. It is "results" we all want and the sooner all agencies adopt a common program and aim, the sooner and greater will be the results. It is to ask your help in declaring of North Carolina a Safety Zone for Babies that I present the subject. We need your help as reaching 4,028 prenatal cases when compared with the 1920 birth rate of over 86,000 is a poor showing for what we wish to accomplish.

When considering the easiest way for the busy physician to report such cases —some of them are using cards supplied

by our Bureau (shown); some of them are systematically sending lists of names, addresses and confinement dates; some use a prescription blank for every case coming to their attention, writing there on name, address and date of confinement, putting it into the hands of patient with the request that she mail it to State Board of Health, Raleigh. We welcome suggestions of simple methods.

We feel a very definite present-day obligation to the profession of motherhood and to which the State of North Carolina is indebted for 86,966 new citizens last year and we need the help of every practitioner in the state in meeting this obligation to the most sublime of professions. Will you help us to lessen the uncertain chances of motherhood and babyhood by putting us in touch with the expectant mothers?

THE PRIVATE DUTY NURSE—A COMMUNITY ASSET.*

Effie Eleanor Cain, R. N., Salisbury, N. C.

I want to say first that in some communities where I have been and in others from which I have heard there has been a reluctant criticism of nurses. I say "reluctant" because folk have faith in nurses; the public stands ready to receive a nurse on high face value, this value based on the opportunities offered and the high standard that the far-seeing and noble of the profession have recognized, exemplified and urged. In one community I heard this: "Nurses watch the clock too closely; they think too much about money-making; they have a strong labor union." Again it was said: "Nurses are too selective about their work." One individual who had employed many nurses said: "I would not want to have a training school if I released such material as we must needs sometimes put up with." In one town I heard the statement repeatedly, "Nurses have no moral standing in this community." If these charges are true the subject of this paper should be changed to read "An Intensive Campaign—Making Private Duty Nurses a Community Asset."

Recalling the lines of James Brinsley Sheridan, hanging on my wall at home:

"Believe not each accusing tongue,
As most weak persons do;
But still believe that story wrong
Which ought not to be true."

I shall discount these facts that have been published, and consider that nurses are an asset to every community; and such an asset as no one else in the community can be.

Community health is the concern of the individual, of the school ,the church and the civic authorities. A people to endure must be a healthy people; a nation to be an enterprising, a stable, an intelligent nation must be healthy.

Florence Nightingale made this terse statement, "nursing is an art which concerns every family in the world," and "the secret of national health is to be found in the homes of the people." Health is capital that yields a large income in money, but a larger one in happiness, efficiency and usefulness,—individual and national.

The world war revealed in no uncertain terms to the government authorities of the United States the nation's perils of many kinds. One of these is physical impairment, not of the country but of the people making up the nation. Then the government awoke to action, to warfare against disease.

Of the nursing profession, the public health nurse because she is the community nurse is most helpful in this fight against neighborhood sickness. She nurses the community, the private duty nurse the individual; but the latter if she seizes each opportunity may be of inestimable value, assisting in the offensive and defensive action against individual and national foes, disease and death.

A nurse in a community should count for uplift work in the social, moral, educational and religious life of the community; the earnest nurse is an asset in each line of community betterment; but not at this time are these phases of her work to be discussed. I stop only to ask each private duty nurse here to enrich her own life and that of the community by meeting all the lofty opportunities coming her way.

Pre-eminently the nurse's field is in the nursing of those who need her skill,

* Read at the meeting of the North Carolina State Nurses' Association, Wrightsville Beach, June 15, 1921.

the nursing of the sick and the well, too; the education in affairs of health of those she nurses and other members of the families in which she for a time lives. In a word she is the member of the community whose very presence therein represents protection against ravages of disease, promotion of health and furthering of health education. Just here I am reminded of the way Florence Nightingale puts this. She said, back in the other century: "Nursing the well is even more important than nursing the sick; preventive hygiene than curative medicine."

As intimated above the public health nurse is ex-officio more in the limelight than the private duty nurse, but the light of the latter cannot be hid under a bushel nor her work limited to the one individual to whom she gives food, medicine, baths and routine watch care.

Let me say this, in many ways a personally qualified and professionally educated nurse may become a greater asset to the community than the physician. I do not mean she will become a general practitioner; not in prescribing medicines is her realm; but she sees more of the personal and human side of her patients' lives; she learns their needs, and if she is wise and tactful she can help in many ways that the doctor knows not of. How many have rested in a feeling of security when a nurse comes into the home. I believe it is in the homes of the people that a nurse does her best work, rather than in a hospital, ofttimes. Let your imagination run riot for a few minutes: "A nurse is on the case"—a burden of responsibility and anxiety shifts from some one, perhaps an overburdened mother, or if the mother is the patient, the brave, burdened, breaking heart of the daughter is lightened and she gathers courage. "A nurse is on the case" —the patient is made more comfortable and the loved ones' anxiety is relieved to a considerable extent. "A nurse is on the case"—the mother and daughters, even the father and the sons, will receive instruction in home hygiene and care of the sick, and not for this case only but for all future illness or prevention of same. "A nurse is on the case" —it is a communicable one—now the patient will be isolated, the community will be safeguarded and, so far as this one source of the malady has to do, an epidemic will be checked. "A nurse is on the case"—now the young man will take the medicine ordered by the physician and the nourishment needed; he will get well. "A nurse is on the case" —but the patient is hopelessly ill. He cannot get well, all has been done that human hands and skill can do. The nurse remains through long hours watching, waiting; the patient is kept comfortable, he is protected from well-meaning but curious neighbors, his last hours are kept free from disturbances. Intelligently and sympathetically she pilots him through the "valley of the shadow" and those who mourn his going find consolation in the dark hours, remembering that for the hours when earthly help cannot save they provided skilled care that every possible attention might be given the departing one.

When people more generally allow themselves to realize that nurses are an asset to the community the question of the shortage of nurses need not be so much discussed. The time is now when we should cease to stress the shortage of nurses. Recruit pupils for schools of nursing, but let the appeal come from another angle; to wit, the tremendous opportunity for far-reaching constructive work offered every private duty nurse; the valuable and valued asset she is in the community. Every time a nurse goes into a home she goes primarily as a nurse for some one who is sick, but she cannot, if she would, limit her task just to nursing the ill one, neither can she circumscribe the influence of her efforts and keep it within the bounds of that one home.

Private duty nurses have a realm all their own. They have "come to the kingdom" to do their bit, their part, in strengthening and advancing community life. Should there be found any shirkers in the ranks, any members of the P. D. N. regiment, not enthusiastic in keeping up the morale of the profession, let those who are strong help the weak, to the end that not one private duty nurse will ever be a liability in any home or community, but every nurse an asset and every community supplied with its full quota of the faithful.

SOUTHERN MEDICINE AND SURGERY

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CHARLOTTE, N. C.

"Read not to contradict and confute, nor to believe and take for granted, nor to find talk and discourse, but to weigh and consider."—Francis Bacon.

DISCRETION.

"Boys flying kites may haul in their white-winged birds,
But you can't do that when you're flying words."

"Plague and famine"—

How these words once uttered have echoed and reverberated from one end of this land to the other.

With, obviously, only the most sincere intentions of rendering mankind a service and of doing his sworn duty, Surgeon General Cummings, U. S. P. H. S., in haste and indiscretion uttered these words which have made such a profound impression for some good and much bad throughout the country.

The President in sincere faith and confidence accepted the recommendation on its own verification, and thus gave an official stamp of approval to a thesis which the facts in the case later proved incorrect and very misleading.

Perhaps only a very few individuals measure up to the best that is in them without some external source of stimulation,—we all need prodding now and then. It is altogether true that the publicity given these statements and the resultant investigations have doubled our individual and collective efforts to fight pellagra as a disease and to encourage better and more hygienic living and to spread the knowledge everywhere as to what constitutes a balanced diet that will supply each body waste. This stimulation—this prodding—from Surgeon General Cummings will, in this sense, work to our own advantage and betterment, but on the other hand, and in a general sense his very indiscreet use of words has wrought an injury to all the South which can never completely heal. The health officers of thirteen States, the public press and scientific journals have sewed up the wounds by showing the world the real facts and proving the arror of the statements but the scar will still remain.

Had this entire communication of the Surgeon General's been uttered by Bill Jones as he whittled a goods box at the corner store there would have resulted but very little harm, for all would understand that Bill Jones was only amusing himself and would not expect him to carefully weigh his words. But we do not expect superfluous or unproven words from those holding high places of trust and confidence.

There is no section of the earth, of any considerable extent, that does not have some conditions peculiar to that section and no one presumes to give the impression that the health conditions of the South Atlantic Coast States are the same as those of the Canadian Rockies. No one presumes to say there is no Pellagra, Malaria or Hookworms in the South or that the commonly used articles of food are the same as an Eskimo menu. But these conditions mean no more to the South than other conditions mean to other sections where other conditions exist. These conditions are not desirable and the facts in the case prove that no section of country has accomplished more in the way of eliminating its undesirable features than the South has accomplished in eradicating Pellagra, Malaria and Hookworm.

The wealth of the South is its cotton. The price of cotton almost overnight, dropped to one-third. Certainly no other section of the United States could receive such a terrific blow and still prove to the world that it has an ample food supply, abundant in quantity and quality.

The surgeon general could well have expected "plague and famine" to follow such a catastrophe in any other section but he did not reckon with a kind providence which gave the South a climate and soil that can support its own people ever without money to buy from the outside.

UNIVERSITY OF VIRGINIA MEDICAL SCHOOL.

The campaign in Virginia for the determination of the location of the State-supported Medical School seems to be showing overwhelmingly that the citizens of the State are deciding for the future and to the best interest of future generations. There certainly remains no doubt but that this school will be a department of the State Universiy and under University control but that it will be located at Richmond which most obviously is the only place in the State where it could be located and serve the best interests of the State.

There is every reason why it should be a department of that great University but in the light of all experience there is absolutely no reason why it should be on the same campus or even in the same town with the other departments.

How apropos is the statement of William Osler, who, years ago epitomized so beautifully the present day situation in Virginia. "To study the phenomena of disease without books is to sail an uncharted sea, while to study books without patients is not to go to sea at all." The present generation are realizing it is not expedient to trust their sons and daughters to undertake life's voyage in a ship manned by men who have never been to sea at all.

However desirable—however essential—book learning and a dignified "University Atmosphere" may be for the greatest unfolding of the potential greatness of human minds it is absolutely imperative that the student physician come in close and intimate association with the myriad forms of disease while under the tutelage of one who knows, before he can gain a comprehensive vision and a trustworthy judgment in the care of human life, and correcting human ills.

Of course the sponsors of the Charlottesville location are genuinely sincere and do not believe they are selfish, yet this narrow visioned sentimentality must give way to a larger and nobler patriotism, a patriotism for a greater university, a much better medical profession, because much better prepared, serving a greater good to the citizenship of a healthier Virginia.

The University is a wonderful institution. It is the pride of all who for generations have felt, both directly and indirectly its ennobling influence. It justly holds an enviable position among the very best institutions of learning in the entire country. Its various departments have produced men whose names will never be lost from historys' pages and if its Medical Department can only be given a fair chance to get ample clinical facilities for practical observation then will come about a combination, which will produce medical men also of which the State can feel proud.

The day of the small medical college has passed and the trend of the times is toward the larger and more efficient university. The logical geographical location for one of these great institutions is Richmond, not alone for the service of the State of Virginia but for all the South, hence this question is vastly greater than a State question, yet one which the State must solve.

A DIFFERENCE—WHY NOT A DISTINCTION?

The history of medicine is replete with protests from members of the profession against the usurpation of the title of "Doctor" and "Physician" by those who in no way are entitled to use them. The reasons ascribed for these protests throughout the centuries have been two: (1) Safeguarding the public against those who would arrogate to themselves these titles which the members of the medical profession have made dignified and honorable and (2) protecting the members of the medical profession from the opprobrium which is inevitable from the use of these titles by men who have not shown themselves as qualified either mentally or morally to be entitled to them.

Of course the degree "Doctor" does not belong exclusively to "Doctor of Medicine"—M. D., but it would be no more than fair and just to demand that when used as a title without qualification, it should apply only to the medical profession, and imply a definite meaning.

There may be those who say this is a "far-fetched" argument and that such confusion is not likely to occur. Events, however, prove that it does occur and confusion in the minds of many results from such misnomer.

The faculty of one of our greatest universities has recently gone on record as favoring the limitation of the use of the title "Doctor" to "Doctors of Medicine," because, to the vast majority, it means a member of the medical profession.

This resultant confusion, too, is not limited to the less educated class but is general. Recently a certain "Doctor" Taylor, whose actual position in life was that of optometrist, plying his trade in Greensboro, N. C., was convicted of certain offenses against law and society. The press in response to society's scandal-gossip-hunger carried extensive accounts of the trial and conviction, and to make the morsel more sweet and appetizing always referred to this man as being prominent and "Doctor." One of the State's best daily papers in an editorial under the caption of "Getting the Higher Ups," said: "A prominent physician of Greensboro has been sentenced to the roads * * * . There are probably thousands of men in North Carolina who are just as guilty as this doctor * * * ."

This man Taylor probably did not presume to be a physician, by the law of the land he could not as an optometrist practice medicine, but he did attach to himself as an optometrist the title doctor and even the editor of a great daily paper was sufficiently confused to say "a prominent physician."

Now, if a highly trained journalist, accustomed to make accurate distinctions, is led into such gross error, are we not forced to conclude that to the laity in general "Doctor" means doctor.

In the light of this specific illustration—and infinitely more evidence can be adduced from the experience of each reader—is it not our plain duty to inaugurate a campaign looking toward the legal protection of the people and also the medical profession, from the danger and injustice which will continue to result so long as the inevitable cause for confusion exists.

SCHOOL OF PUBLIC HEALTH IN HARVARD UNIVERSITY.

Plans for the organization of a School of Public Health in Harvard University, with the aid of an initial gift of $1,785,000 by the Rockefeller Foundation, were announced by the University and the officers of the Foundation.

An excellent general course for the training of public health officers, as well as special courses in preventive medicine, in tropical medicine and industrial hygiene, have already been developed at Harvard. The work has been hampered, however, by lack of adequate funds, and by uneven growth.

The new school will provide opportunities for research, will unify existing courses, and will offer new or extended teaching facilities in public health administration, vital statistics, immunology, bacteriology, medical zoology, physiological hygiene, and communicable diseases.

For the housing of the school the University hopes to secure an existing building of very suitable character immediately adjacent to the Medical School. Funds for the purchase and equipment of the building will be drawn from the gift of the Rockefeller Foundation.

The cost of maintenance and development of the school will be met from endowment funds in part set aside by the University and in part contributed by the Foundation. The Foundation's immediate appropriations to the project will aggregate $1,785,000. The arrangement also provides for further gifts, if the growth of the school seems to demand it, to any amount which shall not exceed $500,000.

Though the School of Public Health at Harvard will have its headquarters in a well-equipped building of its own and have its own separate faculty and administration, it will be developed in close relations with other divisions of the University, especially the Medical School.

The administration buildings of the two schools will, it is hoped, stand side by side on the same grounds; certain heads of departments will be members of both faculties; and a number of laboratories and lecture rooms will be used in common.

The school will be able to co-operate with a large number of laboratories, hospitals and public health agencies in Boston and thus afford its students unusual opportunities for first-hand investigation and practical field experience.

In addition, the school, through co-operative relations with a number of manufacturing and commercial corporations, will be able to offer the students

practical experience in industrial hygiene.

Medicine

Edward J. Wood, M. D., Dept. Editor

Diphtheria Control.

While there has been a marked advancement made in the treatment of diphtheria, with a corresponding decrease in the mortality rate since the introduction of anitoxin, Bernard W. Carey, Boston (Journal A. M. A., August 27, 1921) asserts that there has not been the reduction in the morbidity that might reasonably have been expected. This constant high incidence becomes more remarkable when it is realized that all necessary laboratory aid and epidemiologic knowledge is at hand to prevent and control diphtheria outbreaks. Reaching beyond this, however, is the knowledge of the Schick test for the determination of those susceptible to diphtheria infection, and of the toxin-antitoxin mixture for the immunization of the nonimmune. In spite of the fact that all agencies necessary for the eradication of diphtheria from the community are available, the infection still exists mostly in endemic form. A careful study of the various factors entering into the failure to make much progress in the prevention of diphtheria brings to light the fact that not sufficient intensive work is done by public health authoriies, save under epidemic conditions. Little or no effort is expended to find the source of infection in the sporadic case, and carelessness in culturing for release of quarantine adds many cases to our yearly total. Often effort is directed to the school age group, with resulting school cultures, while perhaps the pre-school age group is far more likely to be the source of infection. What is the remedy for this condition?

1. Education of physicians and the laity to the fact that all agencies are available for the immunization of the susceptible, and for the diagnosis and treatment of the disease.

2. Intelligent study and treatment of the "carrier" or, perhaps more correctly, the "missed case."

3. Education of the laity to the fact that diphtheria is often insidious in onset and mild in course, and recovery is uneventful for the patient, yet serves as the focus of multiple infections of a far more virulent type.

4. Education of local health officers as to the necessity of intensive investigation of the source of each case, and of the necessity of immunizing other members of the infected household.

Fundamental Factors in the Control of Tuberculosis.

The campaign for the control of tuberculosis Henry Boswell, Sanatorium, Miss. (Journal A. M. A., August 13, 1921) says is one of education and not of quarantine. It must extend over a long period of time and on a big scale. It must take cognizance of the fact that as the disease decreases the fight must be more carefully made because our race becomes one of nonimmunes. It will require constantly increasing sums of money, which must be secured from the public. It can be secured only by keeping in touch with the people, to insure their co-operation. To do this the workers must not travel too far ahead of public sentiment, nor forget public ideals. No campaign can be successful unless it is a part of a general health movement, co-ordinated with the various bureaus of the health department, subservient to the general health movement, and co-ordinated, further, with all welfare agencies and the Bureau of Animal Husbandry. The educational system must include the extension department of the bureau, keeping in touch with the tuberculous population, presented to them in their own language, catering to their ideals, and to local and sectional peculiarities. The sanatorium is the fountain head from which all this should flow and through which public sentiment for the final work may be crystallized. The sanatorium is a failure, as far as the prevention of the disease is concerned, unless it is operated as an educational institution rather than as a hospital. A place must be had where the indigent tuberculous population may be cared for during the remaining days of their lives, in order to protect an increasing large number of the "nonimmune" race from the dangerous carrier.

Gynecology and Obstetrics

Robt. E. Seibels, M. D., Department Editor

The Early Recognition of Cancer—Whatever method or technique we use in eradicating cancer, the results depend, to a large extent, on whether or not we are dealing with the new growth in an early stage. And, until the cause of cancer is known and its prophylaxis applied, but little improvement in the mortality from cancer can be expected, unless the laity as well as the profession suspect cancer early in its vicious career.

Particularly is this true of cancer of the pelvic organs. And there are certain fallacies connected with new-growths here that should be ablated from the professional as well as the lay mind.

Age—While the age incidence is largely beyond the third decade, one does find a most malignant growth in the second, and even in the first. And because we have comforted ourselves with the thought, "She is too young for cancer," by the time the diagnosis is forced upon our unwilling intelligence, it is too late to hope for a cure.

Pain—If the behavior of the malignant cells should undergo a change and start to produce pain as soon as they began to grow, the mortality would probably be reduced by 50%. Pain too often is not a symptom of cancer but of a hopeless state.

Hemorrhage — The appearance of blood shows an eroded vessel—eroded either by trauma or by the neoplasm spreading. If we examine our records of cancer operations we will find but few alive, after the five-year period, among those in whom loss of blood has been a prominent symptom.

Loss of Weight and Strength—Few, indeed, among the profession wait for anaemia and asthenia, to suspect cancer. Occasionally one is surprised when, after a consultation, the diagnosis is made to hear a physician say, "I hardly thought it was carcinoma as she has been gaining in weight and her color is better."

The old picture of cancer, presented to previous generations, was of a woman of 40, who has had irregular bleeding for a year, has become sallow and weak, and now has a good deal of pain—requiring morphine, perhaps, to control it—this is not a picture of cancer, but as fecal vomiting in obstruction, is a prophecy of impending death. The time for radical measures in both diseases, is not when the diagnosis can be easily made, but when there is a strong suspision. Let the question of cancer arise about a given case and the burden of the proof should be upon the defendant—conservative.

Observations on Hemorrhages of Ovarian and Tubal Origin.

Edward A. Schumann, Philadelphia (Journal A. M. A., August 27, 1921) advises that a diagnosis of extra-uterine pregnancy should never be definitely made until an embryo is found or evidences of decidual and placental formation are revealed by the microscope. This is particularly true in cases in which the social state of the patient precludes legitimate pregnancy. When massive hemorrhage takes place from an ovary, there is usually, if not always, to be found some disease of the ovarian blood vessels. Normal ovaries do not give rise to massive hemorrhage.

Puerperal Mastitis.

F. A. Dorman and J. K. Mossman, New York (Journal A. M. A., August 13, 1921) urge: (1) more effort toward the prevention of contamination in the first and second weeks of the puerperium; (2) general training of staff and nursing force, that the earliest recognition of infected breasts may be achieved; (3) prompt treatment of the infection by some rational method which will stand the test of figures showing a minimum of suppurative termination. Among 2,000 patients there were fifty-seven cases diagnosed as mastitis, an incidence of 2.8 per cent. Twenty-two and seventy-five one hundred per cent of infantile complications were recorded in the histories of these mastitis cases, as against 10 per cent as a general nursery record. Of these, eight were conjunctivitis cases; three, pustular, and two, coryzas. The onset of infection showed that from the seventh to the twentieth day was the commonest time of incidence. The eighth day is the one peculiarly liable to show a beginning mastitis. The frequency of the occurrence of

breast abscesses is variously given by different authorities. The authors' statistics showed 0.4 per cent; suppuration in 14 per cent. Appreciable lesions of the nipples are not the only cause of infection, for breast abscess occurs not infrequently with the nipple apparently intact, while many patients with severely damaged nipples show no breast inflammatory reaction. Their technic in the case of damaged nipples is to use a constant dressing of either tincture of benzoin or bismuth and castor oil, from 1 dram to 1 ounce, or the lead nipple shield. The last is the most valuable of all. With a damaged nipple, all nursing should be through a glass nipple shield. In cases of bleeding, nursing is temporarily discontinued. In the prevention of contact infection, the nipples are, when not in use, covered by a sterile compress or pad of gauze, 4 inches square, held in place by adhesive strips. This does away with the necessity of a binder to protect the nipple besides providing a sterile dressing which remains in place unless removed by the nurse or physician. Further prophylaxis involves the rapid clearing up of all infantile infections and in case of one-sided mastitis, the prohibition of consecutive nursing from the infected side to the normal one. In the first 1,000 cases, in which the particular protective dressing described above was not employed, the mastitis incidents was thirty-six cases, with five abscesses. In the last 1,000 cases, coincident with the adoption of this dressing, the mastitis incidence was twenty-one, with three abscesses. In the treatment of the mastitis, certain therapeutic measures seem to have almost universal acceptance. These are the use of cathartics and the employment of a binder for pressure and support. The limitation of fluid in the diet is generally accepted also. An overwhelming majority use ice locally until the presence of suppuration is suspected. The moot points are those which involve the emptying of the breasts by massage, pumping or nursing. When the presence of suppuration is suspected, a change from cold to heat gives comfort and hastens localization. All breast manipulation should cease, including nursing. Free incisions with counter drainage by rubber tubes and irrigation with surgical solution of chlorinated soda will hasten recovery.

Urology

A. J. Crowell, M. D., Department Editor

Preliminary Report of Perineal Prostatectomy Under Sacral Anaesthesia.

Our ability to remove the prostate gland under local anaesthesia by the suprapubic route has done much to popularize this operation. Certainly it is an advanced step to accomplish this end without the use of spinal or deep ether anaesthesia.

Dr. Albert J. Scholl, of Rochester, Minn., read a paper before the American Urological Association at Montreal, in June, calling attention to the advantage of sacral nerve blocking in urological work. This can be acomplished by injecting a solution of procain into the sacral canal. The sacral nerves are easily reached in this way and the sensory nerve supply to the perineum is blocked off for three or four hours following an injection. At the Mayo Clinic, this procedure has proven very advantageous in difficult urological examinations and endovesical manipulations. The method appealed to us and we decided to give it a trial, not only in the above mentioned conditions, but also in all surgical conditions of the perineum. We first tried it out in a case of hemorrhoids; then in a tuberculous anal fistula. We were so pleased with the results in these cases that we decided to try it in a perineal prostectomy.

The first case operated upon by this method was referred to us by Dr. L. W. Hunter. A brief history of the case and our findings are as follows:

No. 5180. Jon. R. Aged 71. Farmer. Married. Father of six healthy children. Complaint—Complete retention of urine.

F. H. Negative.

P. H. Venereal history negative. Good recovery following the contagious diseases of childhood. Has suffered with a severe cough for eight years. Occasionally has chills and fever.

P. I. Complete retention of urine for four days. He has suffered for five or six years with increasing frequency of urination,—both day and night,—with hesitancy and diminished force before complete retention occurred. The frequency and tenesmus has been so great

during the last year that rest and sleep have been greatly disturbed and his general health very much broken. Patient admitted to hospital June 24, 1921, suffering with great pain on account of retention of urine.

Physical Examination. General appearance is that of a very feeble old man. Feet and legs swollen to knees. Deep reflexes are normal. Chest expansion hardly two inches. Some dullness over entire lung area, back and front. Sonorous and sibilant rales are heard all over chest, anteriorly and posteriorly. Expiration is prolonged. X-ray of chest shows shadows which are diagnosed active tuberculosis. Repeated examinations of the sputum failed to show tubercle bacilli. Heart impulse is one inch below and one inch to the inner side of the nipple line. A slight murmur is heard, mitral in area and systolic in time, and radiates to the axilla. The second pulmonic and aortic sounds are both accentuated. B. P. 140 S. and 78 D. Heart action markedly increased on exertion. Wassermann negative. X-rays of the kidneys and bladder are negative for stone. Urinalysis is negative with the exception of large amount of pus. Phthalein output on first examination July 4, 1921, was 36% in one and one-half hours. The non-protein nitrogen was 36.3 mg. per 100 c.c. of blood and 1.2 mg. preformed creatinine per 100 c.c. of blood. The non-protein nitrogen remained about the same until the operation July 21, 1921, but the phthalein gradually increased until it reached 64% in two hours and became stable.

Perineal prostatectomy was performed on July 21st in sixteen minutes under sacral anaesthesia. The operation was started twenty minutes after the injection. There was not the slightest manifestation of pain during the entire operation. The patient remained comfortable for four hours following the operation. At this time morphin ¼ gr. and atropin 1/150 gr. were given hypodermically to allay the tenesmus produced by the presence of the drainage tube in the bladder. The gauze packing and the drainage were removed in thirty-six hours and the patient was fairly comfortable thereafter. His recovery was uneventful and he was discharged from the hospital August 13th in fine shape. Pathological report of gland. Weight 63 gms. Benign hypertrophy—both fibromuscular and adenomatous. Considerable interstitial prostatitis.

Five other cases, who had suffered complete retention but whose physical condition was not so serious, have been operated upon since then under sacral anaesthesia with equally as good results. These will not be reported in detail but they are ample to convince us that the method is practical and advantageous. One of the last cases, in addition to having a hypertrophied prostate, had a large abscess of the right lobe. As a result, considerable pain was experienced while the gland was being separated from its capsule adjacent to the bladder. This, however, was not sufficient to call for gas or further local anaesthesia. The sensation should be tested out in twenty minutes after injection and if the anaesthesia is not complete it is evidence that the nerves are not blocked off sufficiently and the operation should be postponed. Unless the injection is made in the exact location to block off the nerves the anaesthesia will not be sufficient. Another one of these cases was carcinomatous and abscessed. The operation was more difficult and extensive. The anaesthetic was ample in this case.

The first one of these cases was one in which operation under a general anaesthesia would have been very dangerous. In fact Dr. J. P. Munroe, a very competent internist, examined him carefully and strongly advised against operation under a general anaesthetic. He has suffered with emphysema and a very extensive bronchitis for years. It is in such cases as this that the sacral anaesthesia is of greatest benefit. We believe, however, the method is advisable in all cases since the operation does not produce pain and is attended with practically no shock. Blocking off the sacral nerves is a safe and easy procedure. It is better than the infiltration method since the blood supply to the wound is not obsructed in such a way as to render sloughing more likely.

In all of our surgery, every precaution should be taken to prevent shock. This is especially true in the old and very feeble patients. It is surprisingly insignificant following prostatectomy under sacral anaesthesia. It not only does away with shock but also nausea, indigestion, and the malnutrition which

usually follows ether anaesthesia. All are familiar with the danger of hemiplegia during the administration of ether in cases of high blood pressure and arteriosclerosis. These are frequent complications of hypertrophy of the prostate gland.

Either the suprapubic or perineal prostatectomy can be performed under spinal anaesthesia but I must confess that I have never been sufficiently brave as to follow the method as a routine. I believe it is attended with more danger than ether anaesthesia and have avoided its use. Blocking off the nerves is a safe and easy procedure.

The operation done in these cases was a modification of Young's perineal prostatectomy. In it all prostatic mucous membrane is destroyed save that portion lying immediately under the symphasis. This is replaced by suturing the edges of the capsule protruding into the bladder to that at the junction of the membranous and prostatic urethra. The gland is removed in its entirety just as in the suprapubic operations and all bleeding vessels ligated. In this way the normal mucous membrane is retained superiorly and the prostatic mucous membrane is replaced by the mucous membrane covering the capsule of the gland. This prevents bleeding and hastens recovery.

Mental and Nervous

Jas. K. Hall, M. D., Department Editor

The writer distinctly remembers when the word orientation fell first upon his ears. Dr. W. M. L. Coplin, pathologist at Jefferson, slipped a photograph of a section of the human brain into the lantern upside down, and, upon discovering his mistake, he asked the student assembly to bear the wrong arrangement in mind, and to orient themselves accordingly. But long before that time, in earlier boyhood days, and especially in boyhood nights, when hunting 'possums and coons, the writer had often experienced the perplexed feeling that resulted from spatial disorientation. But he had not acquired the technical and the more ponderous term. At that early day he frequently felt all turned around and the peculiar sensation was called that of being "turned around."

It is a curious phenomenon not infrequently experienced by the writer, but not at all understood by him. He encountered the feeling recently in journeying down the Southern main line. Greensboro was reached at an early hour of the morning, and the buildings about the station occupied their usual positions. Soon after leaving that city the writer dressed rather hurriedly, and upon returning to his section he was somewhat astonished to discover that the train had turned around and was going north, where it had just come from. The view of High Point from the rear platform, found the station on the wrong side of the railroad, and the same unaccountable situation was observed at Thomasville and at Lexington. The hope was entertained, however, that the jumbling process had not disturbed Salisbury, but wonderful changes had likewise taken place there around the depot. The station itself had got on the wrong side of the railroad, the Yadkin Hotel occupied a new location, and the entire town had moved around through one hundred and eighty degrees. The writer found his way to the dining room, although it seemed to be where it had never been before, and he ate breakfast wondering all the while if the world around him would ever get right again. Still perplexed, confused, addled, befuddled, mixed up, turned around, disoriented, he reached to the rack for his hat, placed it slowly and wonderingly upon his head, and as he looked out the dining room door, the outside world had assumed suddenly and quietly its usual relations. The station had moved over to the other side of the railroad, the Yadkin Hotel had gone back to its usual habitation, and all the town within sight had likewise moved around. But no sound had been made by all the moving, and no one save the writer himself seemed to be surprised.

Just after having passed Greensboro the Department Editor had become disoriented, but at Salisbury he had become oriented again. Orientation means, he has found out, an understanding of one's self with relation to one's environment, to time, and to one's self and to others. Disorientation, therefore, means inability to understand one's self in these re-

spects. The writer had been spatially disoriented. So far as his immediate feeling was concerned he was lost, but his judgment told him that a fast-flying southbound train between Greensboro and High Point could not suddenly turn around and go back northward. And memory told where the station-house at Salisbury had been for these many, many years.

Spatial and temporal disorientation are, to be sure, bad enough. Economic and political and religious disorientation are infinitely worse. Perhaps in these respects also orientation may sometime take place, and we may find ourselves again living in a world somewhat as it used to be.

The entire matter of consciousness, in order and out of order, is poorly understood. The conception of consciousness as the transformation of physical processes into mental processes is a purely mechanistic explanation of the phenomenon, and our knowledge of the origin of the state, and the conditions under which it makes itself known is meager and unsatisfactory. Recently an old man of 77 who had fought throughout the civil war, and had been left as dead in the retreat from Gettysburg, was knocked down by an automobile on a smooth-paved street of his town in such a manner that the right side of his head was brought violently against the street surface. Immediately consciousness was abolished, the heart action became irregular, Cheyne-Stokes breathing developed, and for several days death seemed imminent.

After two or three weeks he became in some degree conscious and eventually wholly so, but his return to normality was attended by interesting and perhaps unusual features. Within a few months he retraced his conscious life—with occasional wide gaps, perhaps—over a period of more than fifty years. For two or three weeks, he thought of himself as in a Confederate camp, later for a few weeks he thought he was in his old North Carolina home, where he had not lived since 1875. By slow degrees in consciousness he came up to the present time. The accident must have caused cerebral concussion, as no evidence of physical injury could be found save a contusion of the scalp.

Of the accident he remembered nothing. For several months after the injury there were no mental associations with persons or with events in the town in which he had been an outstanding figure for more than a generation. Indeed he did not remember having lived in the town. It is not easy to understand how the violent jar knocked out of his mind for many months all ideas relating to his recent past. For several months disorientation for time and for place was marked, but eventually this annoyance disappeared. When consciousness returned why did it not hook up with the link in consciousness in which the break occurred at the time of the accident, instead of back fifty years prior to that date?

The Editor is not able to understand by what moral or legal right one group of men are allowed to intimidate and thereby to keep away from work another group of men able and willing to work, who are in search of a living for themselves and for their families. The purpose of picketing unaccompanied by physical assault is to produce fear. Regardless of the method adopted that is the object. Fear may be produced in many ways, and when chronic fear is brought about by shadowing, following, harassing, abusing, threatening, or in any other manner whatsoever, the purpose is accomplished, for the man who has been made afraid cannot do efficient work. Chronic fear is manifested not only by a disturbed state of mind, but also by a disordered condition of the body. It is the specific result of an assault upon the emotions. If it be illegal to assault the physical being, why should assault upon the emotional being be allowed? Interference with those who are worshipping in an effort to nourish the spirit is punished; why should those in search of food for the body through the medium of honest labor be without protection of the law? Would the law stand idly by and allow a group of men to prevent the physician from visiting his patient? Would the law stand with folded hands and see another group of men restrain through threats or otherwise a minister from entering his pulpit? Will that same law stand mute and inert while another group of men and women are kept out

of the buildings in which they are anxious to make an honest living?

The picketers have certainly made the strike-breakers afraid; is it possible that they have made others also afraid? Grover Cleveland is dead. Has his spirit departed?

The sporadic appearance of the almost unlettered, ignorant, sensational, notoriety-seeking evangelist should call for some psychological attention. Whence his seeming temporary success? Prominence is often mistaken for eminence. He is gymnastic rather than intellectual, vocal rather than convincing, and he frequently makes vicarious assaults upon organizations for individuals which the individuals could not with safety make for themselves. This type of so-called revivalist indulges in abuse when abuse is profitable to him, and behind the armor of his sacred calling he makes insinuations and assaults upon motives and upon characters that he would not have the courage to assail were he divested of his sacerdotal habiliments. Not infrequently he makes use to his own profit of denominational jealousies; he ravages the emotions of the shallow-pated, leaves in his wake emotional exhaustion; he gathers where he has not sown, and leaves nothing beneficent to the community from which he often carries away much of the medium of exchange. How long will intelligent communities encourage or defend the mis-called revivalist who arrays neighbor against neighbor?

Orthopaedics

Alonzo Myers, M. D., Department Editor

Bone Grafting: Study of Cases Operated Upon in U. S. Army Hospitals. J. B. Walker. Annals of Surgery, January, 1921.

This is a short article based on figures in the Surgeon-General's office and is inconclusive because of the incompleteness of the figures.

Records show that among 215,423 wounds in the American Expeditionary Forces, there were about 25,000 fractures, and of these, 15,165 were of the long bones. Thus far there have been reported 906 cases (6%) of non-union.

Of these, 611 were treated by bone grafts; 189 by Lane plates; 52 by suture with wire, and 54 with kangaroo tendon or chromic catgut.

The author concludes that it is reasonably safe to operate during the fourth month after complete healing. Autogenous grafts taken from the tibia have proven the best material for fractures of the long bones. Exact coaptation is necessary for success.

In the cases that have been rated for disability, 48% had 25% disability or under, 22% had between 25% and 35% disability, and 22% had between 35% and 50% disability. In 8% the disability was over 51%. Figures show that where the interval between injury and operation was less than two hundred days.

Non-Union of Humerus: Repair by Means of Bone Graft. M. S. Henderson. Southern Medical Journal.

This study is based upon forty-one cases of non-union of the humerus. The cause of the non-union is stated to be imperfect immobilization in ambulatory splints. The author feels that his method of operative procedure and after-care is efficient. The author reviews the theories of osteogenesis promulgated by Ollier, who maintained that a graft without its periosteum died; by Radzimonsky, who contended that all transplanted bone dies, but that periosteum lives and may form bone; by Barth, in 1893, who advanced the theory that all the elements of bone die when grafted and that the graft is a scaffolding for the replacement of bone by the bone-forming elements of the raw fractured ends of the parent shaft; by Axhausen: by Macewen in 1912, who regarded the periosteum as a living and limiting membrane; all these investigations that osteoblasts, wherever they be, under the periosteum, in the haversian canals, and especially in the exposed endosteum, are the means for completing the union and possible replacement of the graft with and in its bed; that, periosteum, by establishing a speedy vascular connection, otherwise impossible, nourishes the graft while the process of internal reconstruction is going on. The osteoblasts are most abundant in the endosteal surface of the bone, and therefore there ought ideally to be wide appo-

sition of endosteum to endosteum, and the graft must be sufficiently strong to withstand reasonable strain until the condition is wholly cured. For these reasons and because the massive graft satisfies him, the author advocates its use as against the intramedullary peg of Murphy, which is fundamentally wrong in principle, and the Albee inlay method, which does not supply a sufficient endosteal counterposition of bone elements. His statistics show 85% of good results with the massive graft; 70% with the inlay; 50% with the intramedullary graft. There is nothing new in the method of exposure; the graft is held by beef bone screws. A plaster jacket with arm in abduction is applied on the operating table, to be replaced in four to six weeks by an ambulatory, internal angular metal splint, depending upon the clinical evidence and X-ray examination.

Roentgenology

Robt. H. Lafferty, M. D., Dept. Editor

In May of this year Dr. W. D. Witherbee of New York read a paper before the New York Electrotherapeutic Society on the "X-ray Treatment of Tonsils and Adenoids Associated With Exophthalmic Goiter and Tubercular Glands." In June Journal of Experimental Medicine the complete report of the early experimental work done by him and others at Rockefeller Institute was published. (The preliminary report of this work was made in the J. of the A. Med. Assoc. last year.)

In treating tonsils, goiter and tubercular glands Witherbee recommends in the adult the same factors, viz., 7″ Sp. g., 5 M. A., 10″ distance, 4 min., 3 mm. aluminum filters, at two weeks interval on each side. In children the dosage is reduced proportionately. Although the exact number of treatments cannot be exactly fixed the average number is from six to eight.

While the study of the tonsil cases has extended over only about 18 months the observation of the lymphoid tissue in thyroid and tubercular cases has extended over many years.

The following paragraphs from Dr. Witherbees' article may be of interest:

"The same dosage and technique may be used in the treatment of tubercular glands of the neck. The area of exposure including not only the tubercular glands, but also the tonsils and adenoids, for the reason that it is more than probable that the primary focus of infection is, or was, in the tonsil. The X-ray effect on the follicles and crypts of the infratonsillar nodule and the follicles throughout the mucous membrane of the pharnyx produces atrophy, due to the destruction or absorption of the immature lymphatic cells in the follicles, thus lessening the depth and distortion of the crypt and at the same time causing an eversion and evacuation of its contents. In thirty out of thirty-six cases, haemolytic streptococci and staphylococci were eliminated from the crypts four weeks after one massive dose of X-ray.

Investigations of a large number of cases of tubercular glands of the neck treated by X-ray prove not only that the treatment is harmless, but also that the tonsil and adenoids and follicles of the mucous membrane have remained atrophied. In some instances three years have elapsed since the last X-ray treatment; in the more severe infections of the glands of the neck it has been necessary to give as many as forty treatments. This has been done without the slightest indication of any sign or symptom of the impairment of the functions of the normal thyroid, parathyroid, pituitary, and parotid gland. X-ray treatment of tubercular glands of the neck has been successfully carried out for the last ten years and a review of the literature on this subject does not, so far as I am aware, reveal a report of any case in which untoward effects have been recorded. The possibility of an X-ray burn is even more remote than injury to the adjacent glands provided the technique is properly carried out."

Nurses' Corner

Edith M. Redwine, R. N., Dept. Editor

An institute for Inspectors Schools of Nursing and Members State Boards of Examiners was held at Teachers College, Columbia University, July 25th to the 30th, inclusive. The following States were represented at this institute: Delaware, Georgia, Massachu-

setts, Minnesota, New York, North Carolina, New Hampshire, Ohio, Pennsylvania, Virginia and Vermont.

An interesting and instructive program was arranged by the Department of Nursing and Health and carried out to the minutest detail. This program consisted of daily conferences and lectures as follows:

July 25—By what machinery does the State organize and supervise its system of general education?—Professor Hillega.

July 27—How can high school and other educational credentials be evaluated?—Professor Upton.

July 28—What is an Educational Survey for, and how are surveys made?—Professor Briggs .

July 29—What do we mean by Supervision and what is its educational value?—Professor Grace Day.

Lectures on Training School Inspection, 11:30 A. M.

July 25—What is our goal in Nursing Education and how may we hope to reach it? The part played by legislation, State inspection and examination in the general scheme of Nursing Education—Professor Annie W. Goodrich.

July 26—What is a good training school for nurses? Minimum essentials for the theoretical and practical training of nurses?—Professor Annie W. Goodrich.

July 27—What can be done to strengthen weak schools through co-operation and affiliation with other institutions?—Professor Annie W. Goodrich.

July 28—How to inspect a nursing school—Miss Elizabeth Burgess.

July 29—Office organization and procedure for State inspectors; reports and records—Miss Elizabeth Burgess.

July 30—State examinations. What are they for? What do they show? How can they be used to assist nursing schools?—Miss Elizabeth Burgess.

In addition to the regular features of the institute those in attendance had the privilege of attending the following regular courses of the summer session:

Education S-173—Administration in Nursing Schools—9:30 a. m., Professor Goodrich.

Education S-171—The Curriculum in Nursing Schools—10:30 a. m. ,Professor Stewart.

Education S-170—Teaching of Nursing Principles and Methods—1:30 p. m., Professor Stewart.

This bringing together into such close personal contact of so many of the women who are largely responsible for the supervision of nursing schools throughout the different States and for the examination of candidates for registration was most beneficial in many ways and the institute will probably be made a permanent feature of the summer course at Teachers College.

Some pertinent facts gleaned from the lectures and conferences at the recent institute at Teachers College, Columbia Universiy for Inspectors Schools of Nursing and Members State Boards of Examiners:

"The institution called school is definitely a part of the institution called hospital."

"The kind of instruction given should be such in formation as will enable the nurse to prevent disease."

"The first duty of every hospital maintaining a school of nursing is to the school."

"The function of education deals directly with the health, recreation, etc., of the individual. Our goal in nursing education is to prepare a nurse to function effectively in the community. She must understand the needs of the community. Must be made to think in educational terms how she is going to function most effectively."

"One of our greatest errors is not to interpret more broadly to the student the cause which brings the patient into the hospital."

"Actual experience in tubercular and mental nursing necessary and imperative because of opportunity for recognizing this before diagnosis is made."

"The aim of every school of nursing should be the acquirement of good nursing technique as a means to an end."

"The welfare of the community should be safeguarded by standardizing the professions which have a direct bearing on the welfare of the community. 'Goodness cannot be legislated into people but good legislation is educational.' "

"The education of the public to the value of nursing education is most important."

"There must be fewer schools of nursing as there must be fewer hospitals but

there must be more hospital beds and more nurses. The schools must be accredited according to the needs of the community. The number of beds should be determined by the population of the community. Hospitals are no longer run just for the benefit of the doctors. The school of nursing should be a part of educational institutions of the community."

"A hospital cannot be a workshop for its own use."

"In the nursing school the case is the student's problem. The student is the faculty's problem. The faculty is the supervisor's problem. It is necessary that every one assume a responsibility and have a problem to work out if the best results are to be obtained."

"Some of the weaknesses in our present system of teaching are: Poor foundation to teach from. Too many subjects assigned to one teacher. Too little time to prepare class work. Too many other duties. Lack of individuality in teaching. Poor material to teach. Poor equipment to teach with. Impossible to work without tools. No other school would attempt to do in same amount of time what nursing schools do."

"Object of training nurses is to prepare them for a definite function in life. Students are not given sufficient time for study and class work. They cannot study with their minds on work. Minds do not function after a hard day's or night's work. Time for classes is often ill chosen. Students to do best work should be in proper condition. Oftentimes they lose joy in their work because of the feeling of imposition. Subjects taught are not well selected or arranged. Untoward attitude of head nurses and doctors. The hospital has double responsibility to patients and students. A class cannot be shifted every time an emergency arises. It is necessary that nurses should have good class work as well as ward work. Too much teaching done in class room, removed from wards."

"That taught in the class room and the daily ward work should go hand in hand. Need of closest co-operation between head nurses, instructors and doctors. Too many teachers are inclined to teach too much by demonstration, leaving little time for pupil herself to carry out methods taught. Emphasis on theory should help with practical work."

"Fundamental principles of good teaching: Teach by principles and not by notes. Arouse interest, incentives and motives. So that they might be thoroughly efficient nurses."

Dr. McMurray's four standards are good standards by which to measure our work in nursing schools:

"1) Motives that operated.

"(2) Weighing of values.

"(3) Organization of ideas.

"(4) Initiative."

Miss Goodrich says that:

"The contents of nursing education is based on the needs of the community."

Schools of nursing should give a very rich content of education.

Hundreds of young women are going into colleges to "Get." In the past they have gone into nursing schools to "Give."

Proper education should be to "Get and to Give."

Knowledge that isn't applied is weak.

Education goes hand in hand with life.

No matter how schools were built in the past we owe it to those who worked so hard to advance still further."

"The best output in the nursing field is coming from highly educated women and not through attendants."

"The mind expresses itself through intelligent service."

"The attendant group is the group that is dissatisfied with low wage and long hours. Intelligent young women will not sell their lives to an institution or to one or two people for mere money. Only an intense interest, a mental urge will make them do it. Therefore the minds must be fed and this message must be gotten over to the community by constant repeating."

Recent statistics from Henry Street Settlement, New York, show that five years ago the largest number of nursing calls came from physicians, the next from the Metropolitan Life Insurance Company and last from families. Now the condition is just reversed: Families first, insurance next, and physicians last.

One of the chief features at Winthrop College, South Carolina, during the summer session was the three day conference, July 7-9, held by the graduate nurses and hospital workers for the purpose of determining some method of providing better legislation and higher standards of nursing for that State. Several prominent educators were present and the lectures and discussions were most profitable.

The North Carolina League of Nursing Education.

Biltmore, N. C., Aug. 29, 1921.

To the Accredited Training Schools of North Carolina:

Through the courtesy of Mrs. George Vanderbilt, president of the North Carolina Fair Association, the hospitals of our State have been given a wonderful opportunity to bring before the public the advantages offered by our accredited schools of nursing. The State Fair will be held in Raleigh early in October and each accredited school will be allowed space for an exhibit in the booth arranged for that purpose by Mrs. Vanderbilt.

This exhibit is to be from accredited schools only and will consist of a doll dressed in the uniform of the school, pictures of hospital and nurses' home, and any teaching equipment you think may be of interest. The dolls will be sold and the proceeds devoted to the cause of nursing education in the State.

The time is short and, as we must reply to Mrs. Vanderbilt's invitation, it is absolutely essential that you notify the secretary at once if you desire your school to be represented. We shall be greatly disappointed if we do not hear from you.

Cordially yours,

Mary P. Laxton, R. N., President.
(Signed) Gilbert Muse, R. N., Secretary.

Address your reply to Miss Gilbert Muse, Secretary, High Point Hospital, High Point, N. C.

News Items

SECOND (N. C.) DISTRICT.

The Second District Medical Society held its regular meeting at Kinston, N. C., August 19.

Dr. Hubert Royster, president of the North Carolina Society, and Dr. John C. Rodman, Washington, N. C., councilor for the Second District, were the principal speakers of the day. The following officers were elected:

President, Dr. John C. Rodman, Washington.

Secretary, Dr. Ira M. Hardy, Kinston.

Dr. Chas. O. H. Laughinghouse of Greenville invited the society to meet in Greenville in October.

A special feaure was the "old time" barbecue given at Hillcrest by Dr. Hardy. The day was ideal and practically all of the local doctors, dentists and druggists, as well as a number of visitors, participated in the enjoyable occasion.

Seventh (N. C.) District.

The Seventh District Medical Society will hold its annual meeting in Concord, N. C., October 10th and 11th. The meeting will begin on Monday evening, October 10th, at eight o'clock, and will continue through Tuesday, October 11th.

The Medical Society of Virginia will meet in annual session at the Virginian Hotel in Lynchburg on October 18-21, under the presidency of Dr. A. L. Gray, of Richmond. Dr. Alfred Stengel, of Philadelphia, will deliver the oration on Medicine, and Dr. W. J. Mayo, of Rochester, Minnesota, the oration on Surgery. Dr. John Lovett Morse, of Harvard University, will present a paper dealing with some phase of the pediatric problem. An unusually large attendance is expected at the meeting.

Organization of Tuberculosis Association—The organization of the Mecklenburg Tuberculosis Association was completed, June 14. The assistance of Charlotte physicians has been promised by the Mecklenburg Medical Society in promoting the new association. One of the first undertakings will be the erection of a permanent fresh air camp for the treatment of tuberculosis patients under the supervision of a competent corps of physicians and nurses.

Change of Rules Relating to Election of Officers—The North Carolina Medical Society has adopted resolutions for the

naming of new officers by the entire society, instead of by the nominating committee as heretofore. According to the custom of the society, changes in the by-laws must wait one year before final action is taken.—J. A. M. A.

The Fredericksburg Medical Society has elected the following officers: Dr. Roderick Dew, Woodford, president; Dr. F. C. Pratt, Fredericksburg, vice-president; Dr. J. N. Barney, Fredericksburg, secretary-treasurer.

The medical library of fifty-two volumes belonging to Capt. John Edwin Ray, Jr., who was wounded in the battle of Bellicourt and died in October, 1918, has been given to the library of the University of North Carolina by his mother.

Dr. W. deB MacNider, of the medical department of the University of North Carolina, at Chapel Hill, has spent his vacation period in following up his research work in his laboratory.

The Medical Supply Depot at Camp Lee was destroyed by fire August 4. Government officials estimate the loss at $50,000.

Dr. Walter C. Klotz, Medical Director of Blue Ridge Sanatorium, Charlottesville, Va., has resigned and taken charge of the National Sanatorium for tuberculous ex-soldiers at Johnson City, Tenn.

Dr. Kenneth M. Lynch, Professor of Pathology of the Medical College of the State of South Carolina, Charleston, has resigned from the faculty and is connected with a group clinic at Dallas, Texas.

Dr. Charles P. Summers, of Baltimore, spent a few days at his cottage at Morehead City and in visiting old friends throughout North Carolina and at his former home in Winston-Salem. Dr. Summers was recently appointed to the chair of Pediatrics at the University of Maryland and has built up a Baby Clinic at the University from 80 monthly admissions two years ago to over 1,200 monthly now.

Dr. Elmer C. McCollum, head of the School of Hygiene and Public Health at Johns Hopkins University, addressed the Raleigh Woman's Club on the evening of August 31, on "The Importance of Milk in the Family Diet."

Dr. Treloar Wearn of the Peter Brent Brigham Hospital, in Boston, spent several days the latter part of August visiting his parents in Charlotte. Dr. Wearn, a native of Charlotte, went to Boston for his medical course and received an appointment to the Peter Brent Brigham Hospital as interne. After serving two years as interne he was appointed resident physician, two years ago.

Dr. Samuel N. Harrell, Tarboro, N. C., has been notified of his election to fellowship in American College of Surgeons and will receive his degree at the coming meeting of the College in Philadelphia, October 25.

Charlotte to Have Eye, Ear Nose and Throat Hospital.—Drs. Matheson, Peeler, Sloan and Shirley have purchased, August 18, the home and large lot of Dr. J. R. Irvin, corner North Tryon and Seventh Streets, and will erect a modern hospital for the exclusive treatment of diseases of the eye, ear, nose and throat. The new building is to cost not less than $125,000, and the purchase price for the lot was given as $60,000. This four-story building will be the only hospital in the South for the exclusive use of this specialty.

One floor of this building will be devoted exclusively to the private offices of these doctors and they will move from their present quarters on the fifth floor of the Realty Building just as soon as the new building is completed.

Dr. and Mrs. Stuart McGuire, of Richmond, Va., spent the month of August on a motor trip to the New England States and Canada.

Dr. Alexander G. Brown, Jr., of Richmond, Va., has returned from a hurried trip to Carlsbad, where he was called in attendance upon one of his patients.

Dr. A. L. Gray, Dr. Paul W. Howle, Dr. McGuire Newton, Dr. W. T. Graham, and Dr. Paul V. Anderson, of Richmond, Va., have recently enjoyed a motor tour through the Valley of Virginia.

Dr. Douglas VanderHoof, of Richmond, Va., spent the month of August in the Catskills.

Dr. and Mrs. R. Herbert Wright, of Richmond, Va., have returned to the city after an extended vacation spent in New Hampshire.

Dr. O. B. Darden, of the staff of Westbrook Sanatorium in Richmond, Va., spent a brief vacation period in Western North Carolina.

Dr. Hubert Haywood, Jr., and Mrs. Haywood, of Raleigh, have recently enjoyed a motor trip through the Valley of Virginia.

Dr. C. M. Byrnes, of the neurological department of the Johns Hopkins Hospital, has lately been motoring with Mrs. Byrnes through Western North Carolina. He is remembered by his friends at the University of North Carolina as "Dusty" Byrnes, of Natchez, Mississippi.

Dr. Beverley R. Tucker, of Richmond, Va., was a member of the faculty of the summer school of the University of North Carolina.

Dr. Junius F. Lynch, of Norfolk, prominent for years in the military life of the Old Dominion, at the recent meeting in Norfolk of the Virginia branch of the American Legion, was elected State Commander.

Dr. Frederic M. Hanes and Mrs. Hanes, of Winston-Salem, have recently spent a brief period with friends in the North.

Dr. R. K. Adams, of the staff of the State Hospital at Raleigh, recently spent a few days at Virginia Beach and with friends in Williamsburg and in Richmond.

Dr. Levin Powell, of Roanoke, with Mrs. Powell and the children, have lately motored through the mountains of Pennsylvania.

Dr. Robert C. Bryan, of Richmond, Va., spent his vacation period with his family in Maine.

Great Interest Shown in Southern Medical Association Special Train from Atlanta.

Numerous inquiries are being received by Dr. Allen H. Bunce, secretary, Medical Association of Georgia, and Mr. Pat B. Hampton, D. P. A., Seaboard Air Line Railway, regarding the special train which will be operated by the Medical Association of Georgia, to Hot Springs, Ark., account the meeting there November 14 to 17, as announced in previous issue of this Journal. This train, which will consist of all steel Pullman drawing room sleeping cars, compartment cars and dining car, will leave Atlanta via the Seaboard Air Line Railway at 5:30 P. M., Saturday, November 12, going via Birmingham, Frisco R. R. to Memphis, consolidating with the President's Special at Memphis, leaving there at 10 a. m., Nov. 13th, arriving at Hot Springs 3:45 p. m.

Special Reduced Railroad Rates.

The railroads have named rate of one and one-half fare for the round trip, for our meeting, tickets to be sold November 10 to 16, inclusive, with return limit of November 21. In order to secure this rate, you must have identification certificate to present to ticket agent. You can secure these certificates from your local secretary, or from the Southern Medical Association office at Birmingham. Be sure to apply for your certificate early, so as to avoid confusion at the last minute.

As previously stated, all the physicians of the Southeastern States, together with their families, who anticipate attending this meeting, are cordially invited by the Medical Association of Georgia to join them on their special train. Requests for information or Pullman reservations should be addressed to Mr. Pat B. Hampton, District Passenger Agent, S. A. L. Ry., Atlanta, Ga., or Dr. Allen H. Bunce, Secretary, Medical Association of Georgia, Healy Building, Atlanta, Ga.

Marriages.

Dr. William B. Warthen and Miss Christine Gower, both of Cyalton, N. C., were married June 29.

Dr. E. Leavenworth McGill, Petersburg, Va., and Miss Patty Radcliffe Fitts, Wilmington, N. C., were married June 28.

Dr. Geo. G. Snarr and Miss Reba Beard, both of Harrisonburg, Va., were married June 29.

Dr. John Stuart Hume, Norfolk, Va., and Miss Isabell Hamilton Christian, Lexington, Va., were married June 4.

Dr. William Wirt Waddell, Jr., Norton, Va., and Miss Barbara Belle Flock, Williamsport, Pa., were married June 14.

Dr. Campbell Harris and Miss Winifred Gertrude Gwynne, both of Richmond, Va., were married June 3.

Dr. Allen Tupper Hawthorne, Harrisonburg, Va., and Miss Dorothy Turner, Afton, Va., were married June 2.

Dr. Everett Russell Ferguson, Toms Creek, Va., and Miss Amalia Brizzie, Chattanooga, Tenn., were married June 22.

Dr. Richard Hugh Wood, Richmond, Va., and Miss Maria Booth Robinson, King William, were married June 18.

Deaths.

Dr. John B. Elliott Sr., Highlands, N. C., aged 79 died June 27.

Dr. R. M. Davis, Bryson City, N. C., died at the home of his daughter, in Sweetwater, Tenn., July 7.

Dr. Oscar Eason, Goldsboro, N. C., aged 37, died June 29. Dr. Eason graduated at the University of North Carolina in 1910 and joined the State Society in 1911. He was at the time of his death president of the Wayne County Medical Society.

Dr. Richard Eames, Mocksville, N. C., aged 90, died July 20.

Dr. Lawton C. Lipscomb, Ninety-Six, S. C., aged 55, died July 5.

Dr. V. C. Huff died at his home in Wytheville, Va., July 21, at the age of 87 years. He was born in Nelson County, Va., and moved to Wytheville in 1857. While in the service of the Confederate Army, he studied medicine and graduated from the Medical College of Virginia, Richmond, in 1865. Upon his return to Wytheville after the war he practiced medicine until 1873, at which time he organized the Farmers' Bank of Southwest Virginia, and had since given his time to the success of that institution. He is survived by his widow and a son.

Dr. Logan Lindsay Banner, Castlewood, Va., died at his home in that place June 29, from general paresis. He was 63 years of age and a graduate in medicine from the College of Physicians and Surgeons, Baltimore, in 1884. He was a member of the U. S. Board of Medical Examiners for Pensions for a number of years.

Dr. John F. Wright, Keexeltown, Va., aged 68, died June 26.

Dr. Mahlon Bolton, Rich Square, N. C., died suddenly at his home August 24. Born 1863. Graduated from Jefferson Medical College, 1885, licensed 1885, joined North Carolina Society, 1885. Represented Northampton County in State Legislature.

Dr. Archibald McDowell Bynum, Valentine, Va., age 32, graduated University College of Medicine, Richmond, 1913. Died July 18.

Publications Received

ESSAYS ON SURGICAL SUBJECTS.

By Sir Berkeley Moynihan, K. C. M. G., C. B., Leeds, England. Octavo of 253 pages, illustrated. Philadelphia and London: W. B. Saunders Company, 1921. Cloth, $5.00 net.

This volume contains a number of essays written by the author and published at various times during the last few years. In those essays where statistics have been quoted these have been brought up to the close of 1920.

The first of these essays is the John B. Murphy memorial oration delivered before the Clinical Congress of the American College of Surgeons at Montreal October, 1920. After reading this oration there is felt an intimate acquaintanceship with this premier surgeon and a feeling of inspiration to attain greater things.

Other essays included in this volume are:

The Ritual of a Surgical Operation;

The Diagnosis and Treatment of Chronic Gastric Ulcer;

Disappointments After Gastro-Enterostomy;

Intestinal Stasis;

Acute Emergencies of Abdominal Disease;

The Gifts of Surgery to Medicine;

The Surgery of the Chest in Relation to Retained Projectiles;

The Most Gentle Profession.

The author speaks well and he writes well. He is a clear thinker and has the happy faculty of expressing his deeply scientific deductions in a clear and readable style.

THE SURGICAL CLINICS OF NORTH AMERICA (Boston Number, June, 1921). The Surgical Clinics of North America (issued serially, one number every other month) Volume I, Number 3. By Boston Surgeons. 345 pages, with 159 illustrations. Per clinic year (February, 1921, to December, 1921). Paper $12.00 net; cloth $16.00 net. Philadelphia and London: W. B. Saunders Company.

The Boston Surgeons in this 3rd number have certainly upheld the high standards set by the former numbers and have added much to the surgical literature of today.

The clinics in this number are by Nichols, Graves, Lahey, Osgood, Adams, Rogers, Smith-Peterson, Wilson, Hath, Homans, Whittemore, Davis, Ladd, Harmer, Hubbard, Cotton, Cheever, etc.

PRACTICE OF MEDICINE—A MANUAL FOR STUDENTS AND PRACTITIONERS. By Huges Dayton, M. D., New York. Fourth revised edition. 328 pages. Price $2.25 net. Lea & Febiger, Philadelphia and New York.

An epitome of practice, suitably arranged for hasty reference by physicians and for the use of students.

The various sections of this book take up:

Infectious Diseases;

Diseases Caused by Animal Parasites;

Intoxications;

Diseases of Metabolism;

Diseases of the Digestive System;

Diseases of the Respiratory System;

Diseases of the Circulatory System;

Diseases of the Blood and Ductless Glands;

Diseases of the Kidneys.

A very readable and helpful book dealing with pertinent points. Sufficiently boiled down to be useable yet with little left out.

NUTRITION AND CLINICAL DIETETICS. By Herbert S. Carter, M. A., M. D., Paul E. Howe, M. A., Ph. D., Howard H. Mason, A. B., M. D. Second edition. Thoroughly revised. 703 pages. Price $7.50. Lea and Febiger, Philadelphia and New York.

In this edition the teaching has been brought up to date in the sections dealing with Energy, Metabolism and Digestion. There has been an entire revision of the chapter on Vitamines, and a new chapter added on Metabolism in Pregnancy and Lactation together with the feeding of children over two years of age.

INFECTIONS OF THE HAND, a guide to the surgical treatment of acute and chronic suppurative processes in the Fingers, Hand and Forearm. By Allen B. Kanavel, M. D., Assistant Professor of Surgery, Northwestern University Medical School; Attending Surgeon, Wesley and Cook County Hospitals. Fourth revised edition; 500 pages, 185 engravings. Price $5.50. Lea and Febiger, Philadelphia and New York.

This edition has an added chapter upon the restoration of function in infected hands and has also incorporated the knowledge gaind during the war about gas bacillus and streptococcus infections.

The chapter on "Diagnosis and Treatment in General" indicates into which group a particular case will fall and directs the student to the proper section where such cases are discussed in detail.

OPERATIVE SURGERY, J. Shelton Horsley, M. D., F. A. C. S., Attending Surgeon, St. Elizabeth's Hospital, Richmond, Va. 722 pages, 613 original illustrations. Price $10.00 net. The C. V. Mosby Co., St. Louis, Mo.

Upon opening this book one is first impressed with the high grade of paper upon which it is printed and the excellence and clearness of the illustrations. Thus one's attention is immediately arrested and further reading and study proves that the author has also been most efficient in presenting the contents in a very clear and thorough style.

Particular stress is laid, not primarily

upon the mechanical technique but upon the fundamental excuse for surgery—that of preserving physiological function and the interpretation of the biologic processes that follow surgical operations.

The prevailing thought is that of aiding surgical judgment and correcting pathology rather than perfecting the mechanical technique of a kraftsman. To save life, relieve pain and restore function are the objects of surgery. Of course the mechanics of a surgical operation are important but the author won't agree that a beautiful operation, if it results in death, is satisfactory surgery.

Grass.

"Lying in the sunshine among buttercups and the dandelions of May, scarcely higher in intelligence than the minute tenants of that mimic wilderness, our earliest recollections are of grass; and when the fitful fever is ended and the foolish wrangle of the market and forum is closed, grass heals over the scar which our descent into the bosom of the earth has made, and the carpet of the infant becomes the blanket of the dead. Grass is the forgiveness of nature—her constant benediction. Fields trampled with battle, saturated with blood, and torn with the ruts of cannon, grow green again with grass, and carnage is forgotten. Streets abandoned by traffic become grass-grown like rural lanes, and are obliterated. Forests decay, harvests perish, flowers vanish, but grass is immortal. Beleaguered by the sullen hosts of Winter, it withdraws into the impregnable fortress of its subterranean vitality and emerges again upon the first solicitation of Spring. Sown by the winds, by the wandering birds, propagated by the subtle agriculture of the elements which are its ministers and servants, it softens the rude outline of the world. It bears no blazonry of bloom to charm the senses with fragrance or splendor, but its homely hue is more enchanting than the lily or the rose: It yields no fruit in earth or air, and yet, should its harvest fail for a single year, famine would depopulate the world.

J. J. Ingalls.

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INJURIES TO THE BILE TRACT IN CHOLECYSTECTOMY.*

W. H. Goodwin, M. D.,
University of Virginia.

Until recently there has been much debate as to the relative value of cholecystectomy and cholecystostomy with the evidence ever increasing in favor of cholecystectomy. Surgeons were for a long time hesitant about removing a gall bladder unless very grossly diseased because the opinion was so universally held that sometime this gall bladder would be needed to divert the bile stream around a stenosed common duct into the intestine by a cholecystenterostomy. This need is very remote,, and since the gall bladder is very much shrunken, thickened, and adherent in the vast majority of cases of stenosed common duct it does not lend itself to cholecystenterostomy and therefore we should not be deterred in doing a cholecystectomy on this account.

The prevailing opinion seems to be that pancreatitis is better treated by cholecystectomy than cholecystostomy with possibly direct drainage of the pancreas itself. In the vast majority of cases the gall bladder can be more safely removed from within out because by this method the cystic duct and cystic artery can be exposed, in the folds of the gastro-hepatic omentum, ligated and divided before the operative field is discolored and masked by the bleeding usually gotten when the gall bladder is first dissected from the liver. However, I am convinced that there are cases in which the exposure is so difficult and the gall bladder is so distended, or thickened and necrotic, that removal from without inward is the best technique. In these cases the peritoneum can be reflected from the gall bladder, on each side near the liver, and the gall bladder stripped from the liver by blunt dissection.

Richter says the peritoneal flaps should not be sutured over the denuded liver but simply pressed in place.

In case the gall bladder is much distended, aspiration is a great advantage.

O'Day, however, says "it is a grievous mistake to open a distended gall bladder before the exact point of the obstruction has been determined, for the moment it is done the hopeless surgeon has forced himself to grope within a darkness of his own making." W. J. Mayo lays emphasis on the relation of the pelvis of the gall bladder and the cystic and common ducts.

To grasp the pelvis with a clamp and lift it up aids greatly in exposing the cystic duct. Eisendrath calls attention to the fact that the pelvis may lie on the upper instead of the lower side of the gall bladder.

Concomitant with the great increase in cholecystectomies we have a great increase in the number of injuries to the hepatic and common bile ducts, and reports of these injuries are creeping into the literature. These injuries are usually not recognized at the time of operation. Cholecystostomy is usually an easy operation compared to cholecystectomy, which procedure must invade much deeper regions and expose much more vital structures to injury.

The question of drainage after cholecystectomy is still unsettled. Richter and Buchbinder recommend that no abdominal drainage be used after cholecystectomy except in the most virulent infection. They also close the common duct quite securely after choledochotomy, omitting all drainage. Halsted recommends that drainage of the common duct be done by passing a small rubber tube through the cystic duct into the common duct. He says drainage is insignificant after removal of the tube from the cystic duct, and after all the

*Read before Spartanburg meeting Tri-State Medical Association, Feb. 16-18, 1921.

chief thing to be accomplished is relief of tension.

We have taken Dr. Halsted's suggestion and drained all of our common duct cases through the cystic duct and are much pleased with the results. We also prefer a small cigarette drain in all cholecystectomies because a small percentage of cases will leak from the ligated cystic duct.

Willis reports good results in cholecystectomy without drainage and advises that the cystic duct stump be excluded from the peritoneal cavity.

Judd states that it is not necessary to remove all of the cystic duct, but on the other hand Behrend cautions against leaving a long cystic duct because of the possibility of the formation of a pseudo gall bladder. I think this happened in the third case reported in this paper.

Surely there are a few cases in which the surgeon meets with such difficulties in doing a cholecystectomy that injury to the bile ducts is inevitable, but the vast majority of these injuries, I feel sure, are due to errors in technique. One of the most common errors I believe is undue traction on the gall bladder which angulates the common duct. Of vast importance in doing a cholecystectomy is a thorough knowledge of the normal anatomy of this region, and the surgeon who would avoid doing serious injury should be familiar also with the anomalies of the bile tract and blood vessels of this region. Eisendrath has set forth these variations from the normal in a very comprehensive way and I quote from him freely.

The plexus of veins and arterioles which lie on the surface of the common duct are frequently neglected and cause troublesome hemorrhage. The right hepatic artery may course in front instead of behind the hepatic duct. It may parallel the cystic duct or wind around the hepatic duct. The gastroduodenal artery may pass across the front of the common duct or send a branch across the common duct. The cystic artery may arise on the left side of the hepatic or common duct and cross in front or behind one of these in its course to the gall bladder. The cystic artery may arise from the left hepatic artery; main hepatic or gastroduodenal artery. In twelve per cent of individuals there are two cystic arteries and they do not always arise from the right hepatic. Eisendrath reports an injury to the hepatic duct by grasping it with forceps in the attempt to catch a bleeding retracted cystic artery after one had already been ligated.

The cystic duct and hepatic duct run a parallel course in 17% of cases before they unite to form the common duct and this union may not take place till one-half or one centimeter above the ampulla. The right hepatic duct may empty into the gall bladder or cystic duct. There may be four or five instead of one hepatic duct. The cystic duct may make a spiral twist around the hepatic duct before they unite. Behrend says the cystic duct joins the hepatic duct on the medial side in 72% of subjects examined and out of 62 specimens examined 33% of variation of vessels and ducts were encountered.

Unfortunately, most injuries of the bile ducts are overlooked at the time of operation and either a permanent biliary fistula is established or the stricture of the injured duct results in a progressive cholemia often necessitating one of the most hazardous reconstructive operations in surgery.

When the injury of the hepatic or common duct is recognized at the time of the operation an end to end anastomosis of the duct can usually be successfully done. Unless the duct is greatly dilated the anastomosis should be done over a straight rubber tube or over a T-tube as used by Mayo. This suture line should always be covered with omentum.

Should a section be taken out of the duct leaving such a defect that mobilization of the common duct and duodenum will not suffice to bring the ends of the severed duct together, the proximal end of the distal segment of the duct should be ligated and covered with peritoneum and the distal end of the proximal segment should be implanted into the duodenum or stomach, preferably the duodenum. The mucous membrane of the duct should be accurately sutured to the mucous membrane of the duodenum or stomach over a rubber tube. C. H. Mayo has modified the simple tube used by Sullivan by employing the bell end of an ordinary male catheter over which are cemented two small rings of rubber cut from a larger catheter and so placed that one ring will be in the duct and one in the duodenum,

thereby fixing the tube much more securely than can be done by simply suturing. The tube is no doubt eventually passed but remains in situ long enough to greatly minimize the danger of stenosis.

In extensive injuries of the main bile duct resulting in stricture near the fissure of the liver Mayo would anastomose the greatly dilated hepatic duct to the duodenum with a two-row suture on the general principle of gastro-intestinal union, covering the junction with omentum. Walton has reconstructed the bile tract by dissecting down a flap of the anterior duodenal wall and suturing this around a rubber tube, one end of which is in the duct and the other protruding into the duodenum. By dissecting down the duodenal flap the suture line is on the posterior aspect of the rubber tube and to correct this Gunsburg and Speese dissect up the flap of the duodenum throwing the suture line on the anterior aspect of the tube. This impresses me as quite an ingenious method of reconstruction, but I would be fearful of a duodenal fistula which should be carefully guarded against in all such operations.

In order to lessen the danger of ascending infection and leakage Mann constructs a papilla in the duodenum by the use of three tiers of circular sutures in the duodenum around the rubber tube. Eliot recommends that the rubber tube be inserted obliquely into the duodenum after the Witzel method of gastrostomy in order to minimize the danger of ascending infection. O'Day divided the jejunum, anastomosed the distal end of the proximal segment into the side of the distal segment and then anastomosed the proximal end of the distal segment into the bile duct. Rockey quoted by O'Day severed the lower portion of the stomach, implanted the proximal end of the divided common duct into the distal end of the stomach, closed the proximal end of the stomach blind and then did a posterior no-loop gastroenterostomy.

In those cases where a considerable portion of the main bile tract is destroyed and it is not possible to mobilize the upper segment and implant it into the duodenum, stomach or jejunum, the Sullivan method of reconstruction is the one of choice. One end of a rubber tube is placed in the lumen of the upper segment of the duct and the other end is passed through the lower segment to project into the duodenum, or, if this is not possible, the tube is passed through a small opening made into the duodenum. All the exposed portion of the tube is now covered with omentum which forms a fistulous tract.

In his first work Sullivan attached a small rubber sponge to the duodenal end of the rubber tube to facilitate its passage, but later experiments demonstrated that this procedure was unnecessary.

Instead of the Sullivan tube Mayo uses a T-Tube which can be removed. Von Stubenrauch divided the jejunum, anastomosed the distal end of the proximal segment to the side of the jejunum and then brought the end of the distal segment out subcutaneously and anastomosed it to the biliary fistula.

Murphy, quoted by Eliot, made use of a biliary fistula by invaginating it into the exposed distal end of the common duct.

The use of autogenous grafts in bile duct reconstruction has been unsatisfactory and Horsley demonstrated that a transplanted, everted vein would eventually become occluded by contraction resulting from the irritating action of the bile.

Eisendrath has been able to collect fifty-one cases of operative injury to the common and hepatic bile ducts and ventures the opinion that this number does not represent all that have occurred. I am in thorough agreement with this opinion and wish to add two more to this group. During the past thirteen years there have been 486 operations on the gall bladder and bile ducts done in the University of Virginia Hospital. Of this number there were 279 cholecystostomies and 207 cholecystectomies. There were two cases of operative injury to the common duct in this series of cholecystectomies. I do not want to burden you with a lengthy report of these two cases but would like to present the important features.

Case I. T. J., negro woman, 54 years of age, admitted to the University of Virginia Hospital November 9, 1912.

Except for pneumonia in early life the patient never had an acute illness till three years before admission. She never had typhoid fever. She has always been constipated, taking a laxative nearly every night.

About three years before admission, the patient, early one morning, had a very severe pain beneath the right costal margin and this pain radiated backward and upward to the right shoulder. This attack lasted two or three days and was accompanied by marked nausea and vomiting. The patient said she had a high fever at that time but did not recall being jaundiced. Since this attack the patient had to spend about two weeks in bed every month on account of the severe pain, nausea and vomiting. During the intervals the patient could work but was never comfortable and had much gastric disturbance. The patient was a fleshy woman and on examination the abdomen was found to be quite tympanitic. No mass, but tenderness could be made out on abdominal examination, and her family physician said he found a distinct mass below the right costal margin during the last attack, which was a severe one, and from which the patient had recently recovered.

The abdomen was opened through a high right rectus incision and dense adhesions were found binding the thick and shrunken gall bladder intimately to the duodenum, stomach, and transverse colon. After separating these adhesions a large stone cloud be distinctly palpated, apparently in the gall bladder. An effort to expose the cystic duct in the gastro-hepatic omentum failed and it was thought best to remove the gall bladder by dissecting from above downward. This dissection was carried through dense scar tissue with very slight bleeding.

The exposure was difficult and in attempting to expose the cystic duct undue traction was put on the gall bladder which angulated the very mobile common duct giving it the appearance of a dilated cystic duct.

The common duct was cut across and this demonstrated that the stone was lodged in the cystic duct at the junction with the common duct and that the gall bladder was contracted around the stone. The section of the common duct was verified by passing a probe through it into the duodenum.

Fortunately, the common and hepatic ducts were dilated and quite mobile, allowing resection of that part where the stone was impacted. The proximal and distal ends of the divided duct were approximated and an end to end suture with chromacized catgut done.

A linear incision was then made into the hepatic duct above the suture line and a small tube placed and fixed with a chromic gut suture. Cigarette drains were inserted around the tube and suture line and abdomen closed. On the eighth day following operation the tube was removed.

Twenty-two days following operation all drainage of bile had ceased and the patient was in good condition. Stools continued normal and one month from date of operation the patient left the hospital in excellent condition.

A communication of January 28, 1921, nine years after the operation, states that the patient has never been jaundiced but still suffers from constipation, headache, and indigestion. She has had no severe attacks of gall stone colic.

Case II. Mrs. M. C., sixty years of age, was admitted to the University of Virginia Hospital July 30, 1918, complaining of "pain in the stomach running to the right side and shoulder blade." The patient has never had typhoid fever but has had the usual diseases of childhood.

During a period of thirteen years previous to admission to the hospital the patient has been having about six attacks each year of severe gall stone colic. The patient never noticed any abnormal color of her stools, but during one attack about ten years previous to admission she says she was jaundiced. On admission the patient's temperature was normal, abdomen flat, and no masses could be made out, but there was distinct tenderness over the gall bladder region on deep pressure.

The abdomen was opened through a high right rectus incision and the general cavity packed off with gauze pads. The gall bladder was moderately distended, with thick walls, and contained numerous gall stones ranging from a fourth to a half-inch in diameter. The common duct was free and the pancreas soft. The cystic duct was somewhat constricted by adhesions forming a goose neck.

Cholecystectomy was distinctly indicated and in removing gall bladder from within out the common duct was cut, thinking it to be the cystic duct. The distal end of the common duct was car-

bolized and ligated with double ligatures of chromic catgut. The proximal end of the common duct along with the remaining portion of the cystic duct was sutured into the duodenum, as the common duct had been cut about three-eights of an inch below the junction with the cystic duct. The anastomosis was done with chromic catgut, number 0, and fine silk.

One cigarette drain was inserted and the abdominal incision closed.

The patient made an uneventful convalescence and left the hospital in excellent condition. There was never any leakage of bile or duodenal contents. The operator thinks that the extreme mobility of the common duct was a contributing factor toward the accident.

A communication received from the patient on February 1st, 1921, three years after the operation, states that she has been quite well and free of gall stone attacks.

The third case I wish to present has for its interesting feature the closure of a permanent biliary fistula and a reconstruction operation.

Case III. Mrs. E. C., white woman, thirty-six years of age, entered the University of Virginia Hospital on October 26, 1920. The patient has never had typhoid fever, has had pneumonia four times, and the usual diseases of childhood.

In 1913 the appendix was removed and in 1918 she had a hysterectomy for a fibroid tumor of the uterus. Following this operation she had femoral thrombosis.

In December, 1919, the patient had a severe gall bladder attack and a cholecystectomy was done at this time in another hospital. The patient was informed that her gall bladder was badly diseased and contained two large stones. The patient states that she drained bile through a rubber tube for one week and after the tube was removed she continued to drain bile seven more weeks. It is more than probable that the common duct was explored at this time and drained.

From this time till June, 1920, the patient drained no bile, the stools were of normal color, and she was able to do her household work in comfort. During the month of June, 1920, the patient became jaundiced and the stools assumed a clay color. The jaundice steadily grew worse, appetite failed, and there was pain and tenderness in the right hypochondriac region.

On physical examination very deep jaundice was noted, and the general appearance was that of a very ill person. There was found enlargement of the liver and its margin could be palpated about four centimeters below the costal border. A very tender mass, simulating a much distended gall bladder, could be palpated below the liver margin. Temperature on admission was 102 and pulse 118.

A high right rectus incision was made, excising the cicatrix of the former operation, and on entering the abdominal cavity many adhesions were found.

The mass mentioned above was adherent to the liver, duodenum, stomach, and transverse colon. The wall of this mass was necrotic and its contents on aspiration were a brownish, mucous fluid. This mass was quite likely a much distended cystic duct, producing a pseudo-gall bladder, which was easily removed.

The common duct could not be identified, but quite near the transverse fissure of the liver a much distended hepatic duct was found. The duct was opened at this point and a copious flow of bile ensued. No stone could be found in the hepatic duct and the duct below the dilatation could not be probed on account of a dense stricture.

The patient's condition would not permit of any further procedure and, after fixing a rubber tube in the hepatic duct and surrounding it with iodoform gauze, the abdominal incision was closed.

The patient made a very satisfactory convalescence and at the termination of four weeks she left the hospital discharging all the bile through the fistula and the jaundice had almost disappeared.

Since the operation on October 28, 1920, the patient has shown marked improvement, she has gained some weight, all jaundice has disappeared and in every respect she seems to be in excellent condition for some operation of diverting the bile into the intestinal canal.

The stools have been continuously clay colored and there is no doubt all the bile has been discharged through the fistula.

It was determined to dissect out the fistulous tract, using it as a guide to locate the opening in the hepatic duct. Realizing from the previous operation that the opening in the hepatic duct was very near the transverse fissure of the liver, hope was nevertheless entertained that, after dissecting out the fistulous tract, the duodenum or stomach could be directly anastomosed to the hepatic duct, or that the duct could be reconstructed after the Sullivan method.

The operation was decided upon on February 4, 1921, three months after the previous operation. An eliptical incision was made, excising the scar of the former operation, and the abdominal cavity entered without encountering much difficulty from adhesions.

The biliary fistula was intimately adherent on one side to the under surface of the liver and as intimately adherent to the duodenum on the opposite side. After carrying the dissection of the fistulous tract well down, the adherent wall of the duodenum became indurated and friable. To have carried the dissection of the fistulous tract any further would have no doubt seriously injured the duodenum and repair would have been very doubtful in the presence of the very indurated and friable walls. The biliary fistula had been well open for over three months and would now easily accommodate a number 18 rubber catheter.

The portion of the biliary fistula which had been dissected free was excised. Opposite the lumen of the fistula an opening was made in the duodenum and already the pathological process had completed a firm anastomosis between the duodenum and the fistulous tract on the posterior and partly on the lateral aspects. One end of a flexible rubber tube with a lumen of one-eighth of an inch in diameter was inserted into the fistulous tract for about one and one-half inches and the other end about two inches in length inserted through the opening into the duodenum. The tube was fixed to the fistulous tract and to the duodenum with a No. 1 chromic catgut suture. The wall of the duodenum near the tube was neither indurated nor friable and the duodenum was now brought up over the rubber tube and the fistulous opening sutured to the under surface of the liver with two tiers of chromic catgut sutures. The surface of the liver at this point was smooth and covered with a thick and strong layer of peritoneum which held the sutures quite well. The suture line was then covered with a vascular omental flap held in place by chromic catgut sutures.

One cigarette drain was placed near the anastomosis, one in the kidney pouch of Morrison, and the abdominal wound closed.

The patient has been quite comfortable since the operation and there has been no leakage of bile or duodenal contents. Every stool has been well colored with bile. The original drains were removed on the fourth day and now there is only a wick of gauze placed just through the abdominal wall.

Two weeks have elapsed since operation and the stools have continuously been normal. The skin is clearer than it has been for a long time and appetite and digestion are quite good.

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VACCINATION AGAINST TUBERCULOSIS.*

By Karl von Ruck and Roswell E. Flack, Asheville, N. C.

Since the discovery by Jenner of preventive vaccination against small pox, we have been justified in the hope that suitable vaccines would be found which would in a like or similar manner succeed in protecting against other infectious diseases.

The reason that no progress was made for almost a century was that the underlying biological principles were not understood, that bacteriology had to make its advent or had not as yet accomplished the isolation of the specific virus responsible for the disease against which we wished to vaccinate.

That the spontaneous recoveries or the difference in the course of tuberculous disease had some relation to autoimmunization, apart from the virulence of the specific bacillus, was more earnestly considered after historical studies of tuberculosis had shown the difference in its evolution and progress in different races, which were shown to be comparatively slow and often symptomless for long periods of time in races that had been permeated and had suffered from it for centuries; whereas in remote and aboriginal races, which had previously been free from tuberculous infection, the disease ran an acute and rapid course, resembling typhoid fever, and proved almost always fatal after its first introduction among them.

Similar changes were pointed out in other infectious diseases, notably syphilis, without being able to account for the more benign course, as it is observed now.

In races, in which tuberculosis had been prevalent as long as we have records of it, an acquired resistance had to be postulated to account for the differences, and in order to increase this apparently acquired resistance artificially, the vaccination with the specific virus naturally suggested itself.

Our own studies in tuberculosis have convinced us that the defensive substances can pass from the mother to her offspring in utero and an active immunization can occur by the passage to the foetus, by toxins circulated in the mother's blood.[1]

It is therefore, not an entirely Utopian idea of Reibmayer, who holds that with the prevalence tuberculosis has reached and with the favorable modification of its course in the past, the time should come when it will disappear as a serious disease in the form we now know it, and that the human race will eventually resist the infection completely.

In the meanwhile we hope that this remote period can be anticipated by acting now and by accomplishing the object with administration of a suitable vaccine, as we now have it. All students in immunology will agree with the view, that it is because of the production and increase of defensive substances in the course of infectious diseases, that they become self limited and that the patient recovers.

The defensive substance, which stands in relation to a favorable course, in tuberculous infection, or checks and retards the disease, and which may in time cause a spontaneous recovery, begins to develop immediately after the first infection at the point of localization; and unless the bacilli are promptly destroyed or encapsulated, their increase and extension cause their toxins, as well as the defensive substances, to increase and to appear in the circulation, without which sensitization, as we can demonstrate it by local skin test, could not occur.

The resistance of the human organism to the tubercle bacillus is, however, not great enough always to destroy the

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1—Von Ruck. Studies in Immunization Against Tuberculosis—Hoeber—New York—1916—pp. 27-32-34.

bacilli without previously being immunized, and varies naturally in degrees in different individuals. It is further influenced by the virulence of the bacilli that find access to its tissue. Therefore, we must expect periods of extension and recession of the local process, which correspond with the advent of toxemias and of increase of resistance, in the latter case, when the health is not disturbed. Thus, the balance between two contending forces—tubercle bacillus vs. resistance—may be lost time and time again, without the occurrences of marked symptoms that attract attention.

In our experience this specific resistance or immunity against tuberculosis can be increased even with a small diagnostic dose of any of the fractions which may be obtained from the bodies of the related bacilli. To increase it against the whole bacilli, all fractions thereof must, of course, be present in the dose. In order that a maximal degree may be assured, we must give the dose large enough, or slowly increase it.

The efforts of immunization against the pathogenic action of the tubercle bacillus date back to the period of its discovery, and became more numerous and persistent with Koch's subsequent discovery of tuberculin in 1890. Animal experimentation with it, and therapeutic observations from its use, did not yield the expected results, and they were at best unsatisfactory or contradictory. It is now easily understood why it could not have been otherwise, since we have learned to distinguish between the different forms of immunity, especially the antitoxic and antibacterial, or bactericidal forms. We have also learned that to produce an antibacterial immunity we need the body substances of bacilli (endotoxins), rather than the poisons, or exotoxins, which they produce during their growth and multiplication in artificial media. We have further learned that the tubercle bacillus does not endanger life by its secretory or excretory products, which are the specific substances found in tuberculin. These facts were recognized at about the same time by Koch and von Ruck, the former publishing his observations with a modified emulsion of tubercle bacilli in April 1897, while von Ruck reported on his work with a watery extract made from the bodies of tubercle bacilli, a few weeks later. With the latter he obtained his first unquestionable results in the immunization of animals. With either of these products it was possible to produce and to increase the appearance of specific antibodies in the blood of experiment animals, and also in human subjects treated with them.

In 1903 von Ruck applied his watery extract of tubercle bacilli—as the first—for prophylactic purposes in a child one year of age and thereafter continued his efforts in practical experimental and biochemical investigations, seeking to produce a more efficient vaccine from the bacillary body substances and avoiding the use of bacilli emulsions. The results of these studies and observations in the treatment of tuberculous patients appeared in various reports and publications during the years following and those obtained from his later vaccine against tuberculosis were made public in 1912.[1] Greater details are given in his book published in 1916.[2]

Efforts in prophylactic immunization of children were made later by Petrusahky and others in Europe. In this country, Webb and Williams immunized monkeys with living tubercle bacilli and applied their method also in a few children. We have frequently been asked in what respect our vaccine differs from the various tuberculins, and from the tubercle bacillus emulsions which are available in the market and while this question has been fully dealt with by one of us in our publications[1] we may say here that it contains only the albumoses, albumens, nucleo-albumens, fatty substances and lipoids of tubercle bacilli, in proper proportion, obtained without subjecting them to physical or chemical injury, and represents all organic body substances of the tubercle bacillus in solution.

On the other hand tuberculins as first made by Koch, and thereafter by others, are derived from the liquid media upon which tubercle bacilli have been grown and have thereafter been filtered out; they contain therefore little or no bacterial body substances, while emulsions simply represent the tubercle bacilli after having been separated by

1—Von Ruck. Jnl. A. M. A., 1912, Vol. 58, p. 1504.

2—Von Ruck. Studies in Immunization—Hoeber, New York, 1916.

shaking or grinding of the bacillary mass, the emulsion being sterilized by heat.[3]

The subject of vaccination and of biological diagnosis in the efforts to reduce the morbidity and mortality from tuberculosis and consumption appears of such paramount importance that it cannot be ignored, simply because some one has said he did not believe in it, even if this some one, were a most eminent physician. Prejudices have hindered progress in every human endeavor, whereas conservative criticism has always been beneficial. No one is, however, entitled to either unless he has himself fully investigated the subject under consideration, and has examined fully and exhaustively the claims which other reliable investigators have made; and has himself the necessary training and ability to do so.

Knowledge and experience is acquired gradually and new methods and advances for the betterment of conditions, whatever they be, are likewise developed gradually. If these are concerned with the prevention and treatment of disease, the first condition in their practical application must ever be that of safety, that is, there must be sufficient evidence that no harm will follow, which becomes more and more assured with the number of applications, and the time that has elapsed. It is similar in regard to the benefits that are claimed when numbers and time also become factors in the final judgment. In the application of a new method or remedy with which we have no previous personal experience, it is essential that we do not deviate from the one recommended by its author, until we believe ourselves competent to improve it.

Coming now to the practical side of our subject we remind you that in the light of our present knowledge, tuberculous infections occur in childhood and as a rule not in adult life. In an analysis of reactions of 1315 individuals[1] no reaction of any kind was noted in 25 or 1.7%; local reactions only occurred in 366 or 28.3% and general febrile, or focal reactions were observed in 924 or 71.6%. We may, therefore, conclude that no infection had occurred in 1.7%, that there were no tuberculous lesions accessible to the circulation in 28.3% and that 71.5% were actually tuberculous, and liable to further progressive disease.

Including previously vaccinated cases with the above, and adding vaccinations made since, we have a total material of over 3,000 children vaccinated since 1903, and apart from the biological tests of the blood and the general and local improvement which followed promptly, we have become aware of not a single case in which there was reason to assume that their tuberculosis recurred or became active. We have been particularly interested and observant for possible relapses, or the occurrence of active clinical disease. Many of the children have become adults and have married and while we have no statistics to offer, we believe that so far there has been no reason to doubt that our efforts in their behalf have not failed to produce the desired result. Many of them have been repeatedly examined by us personally. We are, nevertheless, fully aware that the time intervening since their vaccination is entirely too short, to form final conclusions, and to assume that the results are actually permanent. We have, however, the satisfaction of knowing that in those whose general condition was more or less impaired, prompt improvement to normal conditions followed and that all the tuberculous lesions and stigmata, which we observed, disappeared and as far as we can ascertain they have not returned. In addition we are ahead in time for the forming of final conclusions and we, as well as other physicians, are going on in the work, without reason to doubt the eventual outcome.*

In the studies referred to it appears that unless we resort to vaccination in the first years of life we must as a rule reckon with an infection already accomplished and that children in a tubercu-

1—Loc. Cit., p. 158.

3—Some of the emulsions, as for instance Koch's, have also been designated as "Tuberculin." Thus Koch called the one introduced in 1897 "Tuberculin R" and a subsequent one "New Tuberculin."

* Much of the work in prophylactic and therapeutic employment of the vaccine has come under the personal observation of Dr. Flack, before and since his association with Dr. von Ruck. He has likewise participated in his biological studies and experimental work upon animals in 1913.

lous environment should, therefore, be subjected to it immediately or soon after birth. Further that in 28.3% of our cases the infection has been overcome, or the lesions had become obsolete and in these the acquired immunity must have been sufficient.

It follows that our vaccinations were made in 70% of already tuberculous children and that in those we cannot speak of it as a strictly prophylactic measure against the acquirement of tuberculosis, but must consider it rather as a prophylactic one against consumption, by removing the lesions in the truly early stage of tuberculosis, which at present is rarely recognized.

Unless children came under medical observation for other reasons no diagnosis would have been made except in very few, whose symptoms would have pointed the way, and in which the ordinary physical methods would have established it. The latter methods would have failed in most instances or would at best have led to a doubtful attitude on the part of the average medical attendant even if he had not had an opportunity to examine. For confirmation a tuberculin test would have been necessary, and this is rarely made in general practice.

To positively establish a diagnosis in the truly early stage of tuberculosis we must resort to biological reactions, rather than to the search for physical signs, which may be slight or absent; and unless destructive processes are also present, their advent is still too frequently awaited, when T. B. in the secretions decide the presence or absence of tuberculous disease.

With the approach of that stage which means pulmonary consumption or ulcerative processes elsewhere, more decided symptoms appear, and it is only then that medical aid is sought. It follows, therefore, that infected children must be sought out, and the examination must include a biological test. The latter is much easier than it is supposed to be by physicians unfamiliar with it and it has the additional advantage that a positive result occurs regardless of the localization of the lesions, which in young children are less frequently in the lungs and most frequently in glandular structures, especially the bronchial and messenteric groups; and unless greatly enlarged, they cause no symptoms, which would direct attention to them.

Selection of Cases.

There is really no selection of cases. Every child should be vaccinated, although we would naturally defer the administration of the vaccine in instances when other diseases are present, and especially when the symptoms thereof would interfere with the observations of reactions, as for instance fever, or acute catarrhal affections of the air passages. Vaccination may be resorted to at any time and the earlier it is done, the better is the prospect that no infection with tubercle bacilli has occurred. There is really no reason to delay even an hour after birth.

Before adminstration of the vaccine a record should be made of the present condition. This should include age, sex, weight, temperature observed for at least 24 hours, respiration and pulse, palpable lymph glands, of the cervical, axillary and inguinal groups, the state of the skin and general appearance, as well as abnormal changes found by auscultation and percussion. A short history of previous diseases, and of tuberculosis in the family or of known exposure, should be part of the record.

Inasmuch as the vaccine is not obtainable through trade channels and must be ordered directly from our laboratory, the directions for its use follow:

The maximal dose of the undiluted vaccine given below may safely be given at one administration in the first month of life, or later if the absence of tuberculous infection is assured; otherwise, when tuberculosis is liable to be present, by gradually increasing doses.

In the adjustment of the individual maximum doses, intervening age periods and body weight should be taken into consideration.

In the light of our experience the great majority of all children have acquired an infection and the frequency increases with age. Children who belong to tuberculous families or who have been knowingly exposed appear to be all infected, excepting infants under one year of age, in whom the positive findings are less frequent.

Inasmuch as such infections need not manifest themselves by physical signs or symptoms and the child may as

yet appear in perfect health, it is evident that we can never be sure that no tuberculosis has been acquired, and the diagnosis in such instances can only be made by the resulting biological reactions which follow the administration of a suitable tubercle bacillus vaccine. It has therefore become our practice to rarely attempt protective vaccination with a single maximum dose, and although we have seen no harm resulting from very severe reactions which we have met unexpectedly we find that such reactions are alarming to the parents and friends; and in private practice it is undoubtedly the wisest plan to avoid them as far as this is possible. This may be done by giving first a minute trial dose which if dilutions of the vaccine are not at hand, may be done most easily by taking up into the syringe 0.1 c.c. of the vaccine and then adding 0.9 c.c. of sterile (boiled) water. This makes a dilution of one part of vaccine to nine parts of water and if we inject 0.1 of this, the dose given is 1/100 c.c. of the vaccine. The balance left in the syringe may be used upon other children if such are ready to be vaccinated at the same time, otherwise the fluid is thrown away.

We as a rule inject for the first dose 0.4 c.c. of this dilution and if no reaction follows we resort to 0.1 c.c. of the undiluted preparation. So long as no general or local reaction (at the site of the injection) follows, we double the subsequent dose until we obtain a general (febrile) reaction, which we accept to have occurred when the temperature has risen at least 1 degree F. or a focal reaction is evidenced by the increase of the physical signs of the tuberculous lesion. As a rule the temperature rise should govern, and the dose which is followed by a distinct rise of temperature must not be increased but must be repeated after five days from the time when the temperature is again normal which is usually the case in 24 to 36 hours. Temperature rises that start later than 24 to 36 hours have another origin and cannot be attributed to the dose of vaccine administered. The same is true if no local reaction has occurred at the site of injection, but inasmuch as the local effect may be very slight or transient, it is well that the physician take proper precautions for its recognition, by the person in charge, and that the child be examined by himself on the following day.

It will be found that several or more numerous doses will be required by this slower and more conservative administration, and the more extensive or the older the tubercles are which are present, the longer will it take to free the organism of their presence. It naturally follows that if extensive enough to cause recognizable changes the treatment will require longer time.

The maximum dose having been reached and no general or local reaction having been obtained after its administration, the case is to be dismissed unless it be one in which manifest tuberculous lesions have been and are still present which, however, represent as a rule advanced stages of the disease, and in which further increases of the doses of vaccine may become necessary.

Since it will be found that with the advent of the age of adolescence, most children have acquired a tuberculous infection, the method of vaccination has for its object the removal of tubercle in order to protect the child from the detrimental effects of destructive processes in the tuberculous tissue, which in the lungs constitute consumption.

To exclude a preceding infection, neither a focal nor a general reaction should have occurred to any dose, including the maximum dose for the particular age period. Experiences thus far point to the correctness of the conclusion that a fever reaction following a full or smaller dose of vaccine is indicative of the presence of a latent or of a slowly progressing tuberculous process, while if only a local reaction occurs after a full dose, without rise in temperature, it indicates that tuberculous changes resulting from a previous infection are sufficiently remote from the circulation, that they may be considered as encapsulated or obsolete.

Specific Reactions.

Local reactions at the site of injection occur in all cases that have, or have heretofore had tuberculous lesions, whether these are healed or not. The reaction consists of redness, heat and swelling diffused over a larger or smaller area where the dose was injected; the part is painful on pressure or may feel lame and tired. As a rule the local reaction reaches its acme in the course of

twenty-four hours and then disappears rapidly. A slight rise in temperature, not over one-half a degree Fahrenheit, may accompany the local reaction if it is of a more severe type, when it also lasts longer.

Local reactions do not occur in children or adults who have never been infected.

Focal reactions, that is, reactions in tuberculous tissue in the lungs and in other tubercular lesions manifest themselves by an increase of the previously observed physical signs or symptoms. In so-called open, i. e. advanced cases of pulmonary or laryngeal tuberculosis there is also an increase in cough or expectoration, or both, lasting for a day or two, after which they subside, and frequently an amelioration of the symptoms is manifest thereafter, the cough being less frequent and easier; if expectoration was present before it becomes less and changes in quality to a more mucous type. Upon tuberculous lesions of the skin, visible mucous membranes, as in the mouth, nose or larynx, focal reactions are readily observed, consisting in circumscribed turgescence, redness and swelling; joints are apt to show swelling, sometimes tenderness with or without spontaneous pain. Bone lesions react in a similar manner, but not as markedly as do joints. Tuberculous ulcers and fistulae show increased secretion. Lymph glands, especially when of recent involvement, or in a state of progressive enlargement or of caseation, are liable to become swollen and tender. Tuberculous kidneys may show tenderness on deep pressure, or the focal reaction may be indicated by a dull aching, or by a sensation of weight, while tubercle bacilli are particularly likely to appear more numerously in the urine, if there is an open caseous lesion communicating with the renal pelvis. In tuberculous ulceration of the bladder the symptoms may be increased temporarily, and a similar increase of the symptoms of the tuberculous process may occur in other localizations. Not all tuberculous lesions show focal reactions at the same time, viz.; focal reaction may occur in one tuberculous area in the lungs and not in others, or in extra-pulmonary lesions and not in the lungs at the same time, to a given dose.

General reactions cause a sense of fatigue and lassitude, vague pains in the back, bones, joints, sometimes nausea, etc.

They are, as a rule, attended by more or less rise of temperature which may amount to 2 degrees F. and more; exceptionally rises to 103 degrees and to 104 degrees F. have been noted in instances when the dose had been increased too much.

Reactions, either focal, local or general can occur in the course of a few hours after a dose or they may not be observed until twenty-four hours thereafter; as a rule they have reached their acme by the end of 24 hours, when they subside more or less rapidly. But it may also take two or three days before they disappear entirely. If the general reaction is marked, the patient should be kept in bed.

Although no serious consequences from any form of these reactions singly or combined have been observed, yet severe general reactions are undesirable especially in weakly patients, as likely to interfere with the patient's desire and ability to take food. Patients, however, often claim to feel very much better than before the reaction was experienced, and, as stated before, focal reactions frequently are followed by marked and rapid improvement of the physical signs.

All reactions tend to grow less marked and in time none occur on the continuance of the same dose; they recur after one or several further increases in dose; eventually they disappear entirely, even to the maximal dose.

When all tuberculous tissue accessible to the circulation has disappeared by absorption or has undergone fibroid transformation or cicatrization, no further focal reactions can be produced.

In normal, that is, in non-tuberculous persons no reactions occur; in them there are neither redness nor swelling, at the point of injection, nor any subjective or objective symptoms.

It has been found that a greater degree of immunity develops at the site of injection and this may completely neutralize a subsequent dose if it is injected in the same place. It is, therefore, necessary to vary the site of injection. The local neutralization of a given dose may be presumed if no local reaction follows its administration in tuberculous subjects.

Much more might be said of and be added to this very important subject, to the study of which Dr. von Ruck has given his entire time, and which he is still pursuing with his associates. The facts to emphasize are:

1. That Tuberculous infections can be prevented only by vaccination.

2. That the certain diagnosis of the presence of tubercle in the organism can be made only by resorting to biological tests.

3. That tuberculous lesions still accessible to the circulation can be made to disappear by the use of specific vaccines.

4. That the rapidity and uniformity of the results depends upon the time elapsed since the infection has occurred, the extent which the lesions have reached, and the degenerative alterations which are present in them.

THE SIGNIFICANCE OF TENDER POINTS AND LIMITATIONS OF MOTION IN SHOULDER JOINT INJURIES.*

H. Page Mauck, M. D., Richmond, Va.

It is not within the scope of this paper to discuss the more severe injuries of the shoulder, such as dislocation and fracture of the neck of the humerus or outer one-third of clavicle, but to deal with those injuries usually regarded as slight but capable of producing such prolonged and troublesome disability. These often are the result of rather insignificant trauma, or are regarded as trivial because they do not produce a deformity, the swelling and physical findings of a fracture or dislocation. At other times, they are coexistent with the latter and are entirely unrecognized in the treatment of the apparent more grave injury. The commonest of this type of injury, and in order of frequency, in my experience, are as follows:

1. Separation of the acromio-clavicular joint.
2. Subacromial burstitis.
3. Fracture of the tuberosity.
4. Strain of the attachment of the tendon of the supraspinatus to the tuberculosity.
5. Strain of subscapularis at its attachment to the lesser tuberosity.
6. Tearing of the attachment of the teres major and latissimus dorsi at their insertion into the bicepital ridge.

I am not unmindful of the fact that an arthritis of the shoulder or acromio clavicular joint often gives rise to symptoms similar to, and often complicates, these injuries and may cause considerable difficulty in arriving at a correct diagnosis.

The importance of a good radiograph, intelligently interpreted, in injuries about the shoulder joint is not to be underestimated, for Robert Jones has said, "Good X-ray photographs of every injured shoulder joint should be obtained without delay for there is no joint so likely to provide traps for the unwary surgeon, and a patient who cannot raise his arm high enough to let him fasten his collar or brush his hair remembers his surgeon daily, and not with thankfulness." A good X-ray here implies, not only one giving the necessary detail but one taken at an angle which causes the least confusion; and a good stereoscopic is usually the most satisfactory. Even with this valuable aid, often the X-ray is negative, and one must resort to a most complete and painstaking examination, if an accurate diagnosis is to be made.

In the injuries referred to, inspection usually reveals little, as the deformity, swelling and redness is absent. However, in all of these conditions, tenderness, pain on certain motions, and limitations of certain motions, either active or passive, are always present. If one will only take the time to carefully elicit and recognize these, the curtain of obscurity will be drawn aside and reveal the true lesion. To make such an examination, one must only recall the bones and their shape, the ligaments and muscles and their actions, as they enter into the mechanism of the shoulder and its motion.

The shoulder is a ball and socket joint, in which the globular head of the humerus is received into the shallow glenoid cavity and protected against displacement by the arrangement of the muscles and tendons about it. Above, the acromion and coracoid processes, with the acromio-coracoid ligaments, form an overhanging vault. When the arm is abducted to a right angle, the

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greater tuberosity passes under the acromion process.

The muscles in direct relation to the joint are: the supraspinatus above inserted into the greater tuberosity; the infraspinatus and teres minor behind inserted into the greater tuberosity; the subscapularis in front inserted into the lesser tuberosity, within, the tendon of the biceps attached to the upper border of the glenoid. The deltoid placed more superficially, covers the joint externally in front and behind. The pectoralis major, latissimus dorsi and teres major pass from the chest to be inserted into the bicepital ridges of the humerus below the shoulder joint proper. And it is by the action of these muscles that practically all the motions of the shoulder joint proper are carried out. The supraspinatus abducts the arm, assisted by the deltoid. The infraspinatus and teres major rotate the humerus outward and depresses it when it is elevated. The subscapularis rotates the humerus inward and depresses it when elevated. The pectoralis draws it forward, assisted by the biceps and anterior fibres of the deltoid and also helps the subscapularis with the latissimus dorsi and teres major to rotate it inward. The teres major, latissimus dorsi and the posterior fibres of the deltoid draw it backward. Naturally, when any movement is being performed, tension is put on the antagonistic muscles in just such proportion as the extreme of that motion. Now, tension or stress can be put on any muscle by carrying the joint into the position opposite to the action of that muscle (passive motion), or tension can be put on the insertion of that muscle by **active contraction** of it. So, in testing motions one must remember that different structures are put under stress by the same motion, depending whether it be active or passive.

While all the motions referred to above concern the movement of the humerus on the scapula—many of these motions carried beyond certain points will cause the scapula to move on the thorax, bringing other sets of muscles into play. For example, abduction of the arm to 90 degrees takes place between the humerus and scapula, but beyond this the scapula rotated by the serratus magnus and trapezius carries the arm to the extended position above the head. This makes it necessary, in testing motion of the shoulder proper, that the scapula be held, so that rotation is impossible.

Lastly, there are two bursae about the shoulder, the subacromial, a very large bursa lying under the deltoid and acromion process covering the tuberosities, the attachment of the muscles to the tuberosities, and extending around in front and around the back of the head so that it envelops two-thirds of the head. This is of considerable significance in shoulder joint injuries. The other is a small bursa between the tendons of the coracobrachialis and subscapularis and has little significance.

Practically nothing has been said about the ligaments and this is intentional, as the ligaments of the shoulder joint proper are all, simply thickening of the capsular ligament, and this is normally so relaxed that I am in doubt as to whether it is ever injured by strain unless the attachment of some of the tendons are completely torn, or the head of the humerus is dislocated. This is not true, however, of the ligaments of the acromio-clavicular joint. They are thick and strong and are the real factors in maintaining the relation of the clavicle and acromion process. If stress or strain is thrown on this joint by injury, they are the structures that suffer.

Tenderness can practically always be elicited over the attachment of a muscle or ligament when it has been injured at that point. So, when the ligaments about the acromio-clavicular joint have been injured by a strain or separation, tenderness can be elicited at that point. Traction downward of the arm throws strain on the ligaments and causes pain. All the passive motions of the shoulder joint are painless, except abduction beyond 90 degrees, which forces the acromion upward; and active motions in extremes in practically all directions are painful because of the weight of the arm and shoulder being thrown on this joint.

In subacromial bursitis, tenderness can be elicited over the bursa just below the acromion process and over the greater tuberosity, and often over the front of the head corresponding to its expansion forward. Abduction, internal and external rotation are the painful and limited motions, both active and

passive, because, in abduction the tuberosity, passing beneath the acromion pinches the sensitive bursa while internal and external rotation causes the sensitive surfaces of the bursa to be rubbed together. After the surfaces at the bursa have become adherent, attempts at rotation or abduction cause pain by pulling on the adhesions. Calcareous deposits in the bursa, beneath its floor or in the tendons of the supraspinatus and infraspinatus muscles may act as a mechanical abstruction to abduction. This is the exception and not the rule.

A tear or strain of the insertion of the supraspinatus gives a point of tenderness just below the acromion over the upper edge of the tuberosity. All active and passive motions of the shoulder are painless except attempt at active abduction throws strain on the insertion and causes pain. Passive abduction beyond 90 degrees and internal or external rotation is painful because of pressure of the acromion on the sensitive point of injury. If the arm is abducted passively and an attempt is made to hold that position, pain will be present at the site of the injury.

Fracture of the tuberosity naturally will give a point of tenderness directly over it. All active motions of the shoulder, except forward and backward, are painful and even these, may be immediately after injury. The most painful and restricted motions, however, are abduction, external and internal rotation, because of the action of the muscles attached to it in performing these motions. The displaced fractured tuberosity may block abduction by impinging under the acromion. Limitation of abduction, internal and external rotation with tenderness over the outer side of the head of the bone should always suggest a lesion about the tuberosity or the subacromial bursa.

A tear or strain of the tendon of the subscapularis will give a tender area over the lesser tuberosity (the front of the head). Active internal rotation and abduction (depression) against resistance are painful while active and passive external rotation and moderate abduction will cause pain by strain on the insertion of the muscle.

Injury to the insertion of the teres major and latissimus dorsi will give a point of tenderness high up on the inner side of the arm at a point corresponding to their insertion. Active internal rotation and backward movement of the arm causes pain on the inner side at the site of tenderness. Active or passive abduction or external rotation, putting strain on these tendons, will cause pain. It is perfectly possible and even probable, that injuries to one or more of the structures about the shoulder joint takes place at the same time, and then we have a combination of restriction of motions and tender points.

From the above, one can conclude that in most injuries of this type the limitation of motions is due to pain and this is true immediately and for a considerable period after the injury. However, after sufficient time has elapsed, adhesions may form between the structures at the site of injury. Or, other structures become contracted from carrying the arm in a certain position and these must be taken into consideration in outlining treatment.

In conclusion—there is no reason why a clear diagnosis cannot be made in shoulder disabilities or injuries, as easily as in any other joint, if one will only take the time to make a thorough examination, utilize the radiograph freely and take into consideration the mechanism in production of such injuries. As a general rule, pain or limitation of only certain or special movements, usually means the injury or lesion is outside of the joint capsule, while lesions or injuries within the capsule will limit and cause pain on practically all motions.

CHARCOT JOINTS.*

Report of Case by Dr. Thomas W. Murrell, Richmond, Virginia.

The following case is reported with the possibility of its throwing some light on the etiology of this condition; also the results of treatment in this case have been so favorable as to suggest a few ideas in therapy not mentioned in any of the text-books on the subject.

Mr. M., age 35, salesman, came to me in the summer of 1904 with a sore on

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his lower lip, referred by Dr. J. Allison Hodges. The sore was a typical labial chancre and this being before the days of the discovery of the spirochete and dark field, the diagnosis was confirmed by confrontation. There was only one woman in the case, a prostitute, and examination of her showed a mouth lined with mucous patches. Dr. R. C. Bryan was called in and confirmed the diagnosis in the case of the woman who also gave syphilis to two other men who came under my care at the same time.

Mr. M. was treated in the usual way of the prolonged mercury and iodid administration, but after two years abandoned treatment and so far as known never had any recurrence to suggest the disease. He was a member of a local military organization and rose to the rank of first lieutenant, though never reaching France, being turned down for further duty on account of his heart. He states that he was so exercised over this that he consulted several physicians in private practice who could not find any heart lesions, though the army board never rescinded its action.

On July 5, 1919, he developed a urethritis and consulted Dr. M. L. Anderson, who found it gonorrhoea. He was treated in the usual fashion until July 21, when he awakened during the night with an exquisite pain in his right knee. In twenty-four hours it was much swollen and the patient suffered severely. Dr. Anderson believed this to be an acute gonorrhoeal arthritis and immediately started the use of gonorrhoeal vaccines. The patient's condition did not improve and was only made bearable by narcotics and local applications with heat. On October 12, 1919, the patient remembered our former connection and a consultation desired, I was called into the case. The result of the consultation was the decision to temporarily forget the gonorrhoea and to look for intercurrent conditions as possible etiological factors. The following examination was made and reports obtained:

Wasserman—Negative.

Blood culture—Negative.

Blood count; showed high white cells.

X-ray teeth; showed four abscessed teeth.

X-ray knee; plate No. 1 showed general inflammation.

Tonsils were examined by Dr. Gatewood who reported them slightly inflamed but who advised against operation for the possible point of infection.

While these reports were being obtained and at my first visit, I recommended a heavy dosage of Phenyl-Cinchoninic acid, using the brand sold as Atophan. This really gave remarkable results in relief of pain and was taken continuously for six months. At times during this period attempts were made to do without it because of gastric irritation which the drug produced, but in each instance pain returned to the joint and the drug was resumed. As a matter of fact the Atophan had been administered for two weeks before the patient was able to get to the x-ray laboratory for the examination of his teeth.

All four of the abscessed teeth were pivoted and these with three other pivoted teeth were extracted. From this time on his improvement was rapid. In three weeks he was walking with crutches and in eight weeks could walk without a cane. There was a marked stiffness in the knee and baking with heat lamp and massage was started.

At this time the peculiar grating in the knee was noticed and I got Dr. W. T. Graham's assistant, Dr. Wheeldon, to examine the knee, who pronounced it a Charcot Joint. Report of x-ray plate No. 2, by Dr. Hodges, confirmed this opinion. While there was comparatively little lateral displacement as compared to the fully developed Charcot pathology, Dr. Wheeldon started the patient on a series of graduated exercises to develop the ligamentous and muscular backing of the joint and improvement is still in progress, as evidenced by x-ray plate No. 3, taken about ten days ago, and the photograph showing the knee as it now exists. There have been up to recently no symptoms of tabes in the case. Lately, however, there is a distinct dimunition of sex desire and I am sorry to state no spinal puncture has been done. This because of patient's refusel.

Remarks.

Charcot joints consist of an arthritis of a disintegrating type. It is painless and slow in development. There is later separation of particles of the cartilage with the characteristic grating sound in motion and a loosening of the joint with

tendency to lateral displacement. These joints have always been regarded as a distinct part of a syphilitic pathology. The treatment recommended in textbooks available is entirely anti-luetic and in extreme cases operative. In truth very little is written and the prognosis in such articles is very gloomy.

This case would seem to show the possibility of such cases being the effect of the well known process of focal infection producing the charcot result by its action in syphilized tissue. If this be true, it opens an avenue of therapy unused in such cases. This case has further benefited by the graduated exercise as applied by Drs. Graham and Wheeldon. There is no mention of exercise being a part of the therapy of this condition though it seems so reasonable in the attempt to strengthen the outer supports of the joint and thereby hold it in line.

PERFORATED DUODENAL ULCER WITH REPORT OF FOUR CASES.*

By Byrd Charles Willis, M. D., F. A. C. S.,
Rocky Mount, N. C.

I hesitate to bring my subject before this society with so few cases to report and would not do so except to interest the members in the large proportion of the perforated cases we have seen in duodenal ulcer, four in eight cases—50%. I presume the experience of our institution is no exception. All simple ulcers of the duodenum are potentially perforative.

Only a few years ago a very heavy percentage of all appendicitis cases was not operated upon until after rupture and there are too many now, but the profession is rapidly educating the public to the dangers of recurrent attacks and I hope the same may soon be said with regard to ulcer of the duodenum.

Ulcer of the duodenum, while not so frequent in women, is not a rare disease in men. Perforation occurs in about 15 per cent of cases, according to Deaver.

The diagnosis of simple ulcer in about 85% of the cases can be made on the history, clinical and laboratory findings which are usually very easily obtainable because there is time for the examinations and the patient is not in acute agony. But the diagnosis of perforated duodenal ulcer is rendered more difficult because the patient is either in agonizing pain or so obtunded sensorily by morphine when he reaches the hospital that he is unable to collect his thoughts and intelligently co-operate in getting the necessary history for a diagnosis. Physically, there is such great board-like abdominal rigidity and general tenderness that one is unable to elicit definite information, and the acute abdomen contraindicates the X-ray which would cause the loss of much valuable time.

There are, however, a few cardinal facts which can usually be learned from the patient or relative that will enable one to arrive at a reasonably certain diagnosis. First, history of periodic attacks of pain after meals, usually three or four hours, occurring in the spring and fall, duration, two or three weeks for a period covering one or more years. Second, food or soda relief of pain (one of our cases had a certain hour to drink a milk shake because if he did not pain would occur). Third, sudden onset of agonizing pain following some exertion or filling of the stomach. Fourth, some form of chronic stomach trouble which the patient may term "indigestion," "heartburn," "dyspepsia," etc. This does not take into consideration that small class of cases which have a perforation as the initial symptom.

The physical findings are: First, the patient presents on inspection a pinched anxious expression as if seriously ill. Second, general abdominal board-like rigidity, more marked, if anything, on the right side, shading off toward the left lower abdomen. Third, obliteration of the liver dullness due to escape of gas into the abdominal cavity, clearly demonstrated in two of our cases. Fourth, high leucocyte count unless overwhelmed. Fifth, shock if seen early. The above symptoms and physical findings are those usually seen where the ulcer has ruptured suddenly following some exertion or overloading of the stomach. There are a number of cases who will have a localized abscess in the upper abdomen following slow perforation. The majority of perforations occur in the first two inches of the anterior wall of first portion of the duodenum which is a favorable site for

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the localizing of an abscess owing to the close proximity to the overhanging liver and gall bladder, gastro-hepatic omentum and stomach. There was an attempt at walling off in three of our cases, all of whom survived.

In considering the differential diagnosis of acute perforation of the duodenum we will have to consider perforation of ulcer of the stomach, but as 70% of the perforations are located near the pylorus it is almost impossible to more than guess and it really makes no difference from a surgical standpoint as one can reach both through the same incision. But if the maximum point of tenderness and rigidity is on the left side and other symptoms of perforation are present, the diagnosis of perforated gastric ulcer involving the fundus should be made.

Perforative appendicitis may have onset with referred pain in epigastrium or over the whole abdomen, finally settling in right iliac fossa. There may be a dyspeptic history but not the type associated with duodenal ulcer. History of previous attacks of more or less severity. The muscular rigidity is not so marked in appendicitis, nor is the pain and agony so great as in perforation of the duodenum. There is not the same degree of embarrassment of respiration in appendicitis, nor is there the same tenderness and rigidity obtained on palpation of the upper quadrant of the right rectus. Tenderness in the right iliac fossa is present in both. Of course perforation of a high lying appendix which is retroverted and extends to the liver is very difficult of differentiation. But here the exquisite tenderness and board-like rigidity is lacking in degree. It should be a rare mistake for acute perforative appendicitis to be diagnosed as a perforative duodenal ulcer but it is not unusual for an ulcer to be diagnosed as appendicitis because the escaped contents of the duodenum follow around the colon by way of Morrison's space in front of the right kidney to the cecum.

Acute perforation of the gall bladder may give both local and general symptoms simulating very closely acute perforation of duodenal ulcer.

A thorough history is the only means of diagnosis. A history of previous attacks of hepatic colic with or without jaundice, occurring in fat females of middle life should be regarded as significant of gall bladder perforation. The pain coming independently of food, passing through or around the costal margin to the back or through the right shoulder blade; temperature and chills; stiffness or soreness in upper right quadrant; flatulence; capricious appetite; and discomfort on an empty stomach are further evidences in support of gall bladder perforation. It is estimated that 10% of gall stone cases give no premonitory symptoms, hence perforation may be the initial symptom in which case differentiation is practically impossible.

Acute pancreatitis should also be considered in the differentiation of acute perforated duodenal ulcer, but as we have no case we will not enter into the symptomatology.

The correct diagnosis was made in all of our cases previous to operation. We do not feel that we could claim any special diagnostic ability for these few cases because the symptoms were so typical. Two cases were seen twenty-four hours after perforation, one was seen fifteen hours after, and one, six hours. In the case seen fifteen hours after perforation, moribund then, there was general abdominal dissemination of a large quantity of purgatives and three pints of mustard water. Deaver says, "Purgation in acute appendicitis spells perforation." In this case it might be said that purgation and emetic spell a funeral. The ages range from 26 to 43 years.

Treatment: Immediate operation was performed in all cases with excision of ulcer and closure of opening by purse-string or mattress suture, free drainage and no gastro-enterostomy.

There seems to be no dissenting opinion about the advisability of immediate operation following perforation and many reporters show that the shorter the time elapsing between perforation and operation, the lower the mortality. Demmer (No. 2) reporting 52 cases of gastric and duodenal perforation followed by operation, had a total mortality of 48%. Those done within six hours, mortality 6%. Reinhard's (No. 3) cases of perforated gastric ulcer showed a mortality of 24%, and of those operated upon within twelve hours the mortality was 7.6%.

There is a marked difference of opinion among many surgeons as to whether

the abdomen should be drained. While our cases were drained we did not get the amount or type of discharge one would expect where there was evident contamination of the abdominal cavity, showing that the escaped contents were practically sterile. We believe that many cases could safely do without drainage, especially if the rupture occurred when the stomach was empty, but would prefer to drain if there was gross food in the abdomen or if the rupture had occurred twenty-four hours previously.

There is a marked difference of opinion as to the performance of a gastro-enterostomy at the primary operation. Deaver advocates and does this and believes that it is becoming more recognized as a useful procedure in properly selected cases and in the hands of the surgeon accustomed to working in the abdominal cavity. He believes in the focus of infection being located in the appendix, gall bladder or elsewhere, and urges its discovery and removal. None of our cases had a gastro-enterostomy. A great many post-operative peptic ulcers of the jejunum are being reported in the current literature which must be considered as added weight against the performance of gastro-enterostomy. One should also consider the undoubtedly higher mortality a gastro-enterostomy at this time carries. In our simple cases we have excised the ulcer and performed a posterior gastro-enterostomy. If the excision of perforation and subsequent closure encroached too much on the lumen one may be forced to perform a gastro-enterostomy or some form of pyloroplasty and accept the added risk. We have not performed any pyloroplasties as none of our cases showed any considerable stricture of the lumen following repair of perforation, but we believe Finney's could be used to great advantage in many cases.

Histories of cases in brief form are as follows:

Case 1. Male. Mr. W. T. B. Hospital No. 2787, age 37, married, farmer, entered April 7th, 1919. Complaint: Agonizing general abdominal pain, duration about twenty-four hours. Has had stomach trouble for years coming on in early spring and fall, consisting of attacks of pain coming about three hours after meals, covering a period of from four to eight weeks. Food and soda relief.

Physical findings: Pinched anxious expression, rapid shallow respirations, board-like abdominal rigidity more marked over upper right quadrant, and tenderness of greater intensity in the right upper quadrant.

Operation: Right rectus incision, excision of ulcer anteriorly located close to pylorus. Owing to narrowing of pyloric ring the incision for removal of the ulcer was made longitudinally and sewed so as to have scar transversely, which materially relieved the partial stenosis.

Subsequent history, uneventful recovery. Patient seen four months ago, says that he is able to work on farm, is heavier and feels better than he has for years.

Case 2. Mr. J. M. B. Hospital No. 3182, age 36, married, freight conductor, white, entered August 16th, 1919, 5:00 P. M.

Complaint: Severe agonizing pain in epigastrium; duration, six hours. Seized with attack while on run in neighboring town and in thirty minutes the intense pain had spread over whole belly. Morphine necessary. No nausea or vomiting. Has had seasonal attacks of pain for three to four weeks each year. Found that by taking a milk shake about 11 A. M. he was much more comfortable and free of pain.

Physical findings: Poorly nourished, ill-looking man, temperature 101, pulse 120, respirations 22; marked abdominal rigidity and tenderness with greatest point in upper right quadrant, obliteration of liver dullness.

Operation: Right rectus incision; findings, stomach, omentum and intestines acutely inflamed, patches of fibrinous exudate, considerable cloudy fluid in upper abdomen with clear gastric juice flowing out of small perforated ulcer just to stomach side of pyloric ring. Fluid was aspirated, perforation repaired with two layers of linen sutures.

Subsequent history: Normal post-operative recovery, no further symptoms and is able to resume his work.

Case 3. Mr. J. M. Y. Hospital No. 3183, age 26, married, machinist, entered August 16, 1919, at 8:30 P. M. before we had finished operating the preceding case.

Complaint: Severe attack of pain in upper abdomen about twenty-four hours ago following a heavy straining effort over a motor car. History for the past year: Has had gnawing pains before meals relieved by eating. There were intervals of freedom lasting from one to four weeks. Ten days before admission had quite severe attack which kept him from sleeping, and the day before was taken with sudden severe pain which required a large dose of morphia for relief.

Physical findings: Marked abdominal rigidity and tenderness in upper abdomen, liver dullness obliterated. clapotage could be made out. Patient vigorous, well nourished.

Operatoin: Right rectus incision, perforation 5 m. m. in anterior surface of duodenum half inch below pyloric ring, walled off abscess of about eight ounces of foul-smelling, sour gastric juice. Ulcer hole plugged with a piece of coagulated lymph. Hole closed with two rows of mattress linen sutures, all fluid aspirated out of belly, drains placed into Morrison's space in front of right kidney (location of abscess).

Subsequent history: Uneventful recovery except very high pulse, 150, for two days. Able to resume his garage work and is free of symptoms.

Case 4. Mr. A. J. N. Hospital No. 3829, age 43, married, civil engineer, white, entered February 9, 1920.

Complaint: Agonizing general abdominal pain for the past fifteen hours.

History: Indigestion for the past two years, always eased by food. Constant epigastric distress. Taken with sudden severe pain in the epigastrium at 8 P. M. the evening before admission, sent for doctor who prescribed salts which was not taken until about 11 P. M., when he was feeling a little easy. This brought on a violent pain and he sent for his doctor again who thought he needed an emetic, and recommended hot, strong mustard water; this he took in ascending doses (three pints in all being taken) in hopes of overcoming the ever-increasing agony. It was finally necessary to give him a grain and a half of morphia which only partially relieved him.

Physical examiation: Large, robust, vigorous man in a state of almost complete collapse, pulse 150, temperature 98, respirations 42, leucocytes 13,000, total red cells 5,200,000. Intense abdominal rigidity, sense of pain obtunded.

Operation: High right rectus incision, aspiration of about three pints of cloudy yellow fluid. Intestines intensely injected and greatly distended with gas. Ulcer about 5 m. m. in diameter was found in third portion of duodenum still pouring out yellowish material. Patient took anaesthetic badly, remained cyanosed and rigid, making operation very difficult. Sutures placed so as to close ulcer opening, drains carried to point and abdomen closed in usual manner, gastric lavage while under anaesthetic.

Subsequent history: Continuously ascending pulse to 180 and rise of temperature 104, dying eighteen hours after operation.

Deaver, J. B., No. 1, Surg., Gynec. & Obst., 1918, XXVI, 489.

Demmer No. 2 and Reinhardt No. 3. Med. Science Abst. & Rev., 1919, Vol. I, No. 2, 190.

OBSERVATIONS DRAWN FROM OPERATIONS ON THE HEAD.*

By Addison G. Brenizer, M. D., Charlotte, N. C.

Being, myself, neither a neuro-surgeon nor an orthopod, I have taken certain privileges with the head and spine, drawing from the domain of each specialty. Such privileges would likely not be taken by either specialist, out of deference to his more specialized confrere.

From the viewpoint of either extreme specialist, my paper might appear elementary or perhaps academic, but he will at least recognize from his more superior position the importance of my cry.

My paper is entitled observations, etc., and observations they actually are of my own work and others, of others mostly at their source:

Choked Disk.

I have observed, therefore, that the importance of the so-called "choked-disk," better called papilledema and in reality the chief subjective as well as objective indication of intra-cranial pressure, is not yet fully appreciated.

The condition of papilledema is in no

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* Read before Spartanburg meeting of Tri-State Medical Association Feb. 16-18, 1921.

way an inflammatory affair and because it was formerly spoken of as "optic neuritis," should lead no one, any longer, to think of it as having anything to do with inflammatory or toxic conditions. On the other hand, there is an entity to be called "optic neuritis" associated with inflammations in the sinuses about the nose and face, and general toxic conditions.

Papilledema is a mechanical process due to stasis of the cerebro-spinal fluid, under tension within the subarachnoid spaces of the optic nerve sheath. The fluid finally backs up in the optic nerves themselves, entering at the points where the vessels penetrate the nerves.

Papilledema and Cerebro-Spinal Fluid Pressure.

I was all the more persuaded, recently, in discussing the subject of fractures of the skull and brain injuries, that the real importance of papilledema was not considered in forming a judgment as to when to operate on these cases and whether or not to perform an operation at all. While this judgment, as to whether to operate or not, should be based on the presence or not of a papilledema and its precursory signs, like engorgement of the veins entering the nerve head and contraction of the arteries coming from it, with first a shading of the nasal half, I have been surprised that so little attention is given to it. The presence or not of this most important sign of intra-cranial hypertension, coupled with an increase or not of cerebro-spinal fluid pressure, the general condition of the patient permitting, is the sine qua non on which the determination to decompress or not should be based.

Headache.

The headache is likewise attributed to pressure or tension on the dura, supplied as it is, except around the foramen magnum, by the fifth nerve.

Intra-Cranial Hypertension.

The success of all intra-cranial operations is determined largely by one's knowledge of and skill in controlling tension. Intra-cranial over-tension is mostly a matter of an increase in the fluid content of the chamber, whether it exists as free fluid in the ventricular and arachnoid spaces or as an edema, a state to which the nervous tissues are particularly prone.

Origin, Circulation and Absorption of Cerebro-Spinal Fluid.

In its mode of origin and in its pathway of absorption, as well as in its physical and chemical properties, the cerebro-spinal fluid is unique among the body fluids. Two facts have been established with a fair degree of conclusiveness, namely, the dual origin of the cerebro-spinal fluid and its return to the general circulation chiefly by a process of filtration through the arachnoid villi into the great sinuses. Unlike the circulating lymph, which is derived from the blood by a process of filtration, diffusion and osmosis, the cerebro-spinal fluid is the secretory product of the ependymal cells which cover the choroid plexuses, and the fluid is added to by contributions from the nervous tissue itself in the perivascular spaces. Although it must be admitted that certain fundamental anatomic and physiologic aspects of this problem are still unsolved.

Another interesting observation which has been brought forth by a number of workers is that these plexuses constitute a remarkably effective barrier against the entry into the cerebro-spinal fluid of substances present in the circulating blood. This observation may indeed explain, in part at least, the unique physical and chemical properties of the fluid, for in these respects also it is unlike any other fluid in the body, being approached most nearly in its composition by the sweat, tears and the aqueous humor of the eye. From the circulating lymph normal cerebro-spinal fluid differs in several striking particulars: it is of lower specific gravity, contains a small content of salt, only minute traces of protein and no fibrinogen.

Cerebro-spinal fluid exists in the membranes of the cerebro-spinal axis and throughout the ventricles of the brain in amounts from 100 to 150 c.c.

The cerebro-spinal fluid elaborated by the choroid plexuses is poured out into the cerebral ventricles, lined by smooth ependyma continuous with that of the central canal of the spinal cord. Discharged by the choroid plexuses into the lateral ventricles, the fluid passes through the foramina of Munro into

the third ventricle and thence through the aqueduct of Sylvius into the fourth ventricle. Thence it escapes through the foramina Majendie and Luschka or Retzius into the subarachnoid space.

The fluid on reaching the subarachnoid cisternae about the cerebellum passes either caudalward in the spaces enclosed by the arachnoid membrane about the spinal cord, or cephalward over the hemispheres and around the basilar structures, to constitute the irregular collections and streams in the various enclosures made by the arachnoid membrane. In the different sulci it is found in considerable amount, but over the convolutions the layer is one of capillary thickness. Traversing these arachnoid channels the fluid comes to the points of absorption.

Normally there is no cerebro-spinal fluid in the subdural space.

The process of fluid escape from the cerebro-spinal spaces is one of passage from the arachnoidal villi through a mesodermal membrane into the lumina of the great sinuses. When one speaks of fluid passage through a cellular membrane, the factors of osmosis, diffusion and filtration must be considered. It is generally conceded that the choroid plexuses elaborate a certain amount of cerebro-spinal fluid in the course of twenty-four hours and this requires a proportionate flow through the subarachnoid channels. The mechanism of the cerebral pressure relations is such that the fluid pressure is continually being reduced to that of the venous circulation, and, in consequence, there must be a constant absorption of the fluid to compensate for the constant secretion.

In addition to the chief or venous pathway of absorption there exists an accessory mechanism of drainage through the lymphatic system. This pathway may be assumed to have its origin outside the dura. The fluid escapes outward along the cranial nerves, especially in the perineural spaces. From there it becomes taken up by the lymph channels after a more or less short passage through the surrounding connective tissue. There is probably no direct absorption by the lymph vessels from the perineural spaces. It appears likely that the sole pathway of fluid escape from the spinal meninges is along lymphatic channels and not directly into the blood stream. This probably eliminates constantly the cerebrospinal fluid from the spinal cord in the same manner as do the cephalic lymph channels. It has been pretty generally accepted that increase in intra-cranial tension is due more to a fault in absorption of the fluid than to an over-secretion of the fluid. This obstruction may take place at several sites along the pathways toward absorption: at the site of the aqueduct of Sylvius, at the site of the foramina of Majendie and Luschka or finally at the point of escape from the cranial chamber, at the site of drainage of the arachnoidal villi into the larger sinuses.

The view most favored has been that most of these hydro-cephalic conditions are produced by some failure of development or obstruction of the points of escape for the fluid from the cranial chamber rather than, as was long supposed, from a fault or obstruction at the foramina of Majendie and Luschka. The fact that in most cases the fluid could be withdrawn from the ventricles by a lumbar puncture, in other words that it had access to the sub-arachnoid spaces, certainly seems to favor this view.

Possibly no more conclusive argument than Weed's recent paper could be given favorable to the view that imperfect formation or occlusion of the villi is one source, if not the most common one, of what has been called idiopathic hydrocephalus. By injecting a suspension of lamp black into the cerebrospinal spaces of kittens, he was able to produce extreme degrees of internal hydrocephalus quite comparable to similar conditions seen in human infants.

Dandy, on the other hand, in a more recent paper estimates that 66% of congenital hydrocephalus are due to strictures of the aqueduct of Sylvius. This view is widely contrary to the general idea of the site of the obstruction at the point of drainage of the arachnoid villi into the sinuses. The observations of the arachnoid membrane and watery brain surface in acute and especially in chronic brain injuries, with clinical signs and symptoms of intra-cranial hypertension, would certainly lend emphasis to the view that the obstruction to excretion of the fluid lay at a point distal to the pathway of flow through the cortical subarachnoid spaces, that is

at the site of drainage from the cranial chamber.

Such a procedure as Dandy's partial excision of the plexus from within the dilated ventricle does not throw much light on the discussion since the same degree of tension should recur so long as the ultimate outlets for the fluid are defective.

While one realizes that in dealing with the human body that he has too frequently to reckon with probabilities and that the ideas of today may well not be the ideas of tomorrow, it is nevertheless discouraging and even bewildering to have to throw them aside into the discard, especially after they have been sifted through considerable study and settled in one's mind. But if the grave doubts, expressed by the workers in Carlson's laboratory as to the justifiability of the common assumption that the choroid plexus is an active secretory organ and therefore that there is such a thing as cerebro-spinal fluid circulation, should materialize, our entire theorem will fall to the ground.

The Operation of Subtemporal Decompression.

Although Cushing in 1905 made clear the operation of purposeful decompression, following, it is true, many observations before this time that patients either with undiscoverable or unremovable tumors had been benefited from pressure symptoms by opening and leaving open the dura, still, to this day there are decompressive or supposed decompressive operations done, where the dura is not opened and left open.

Cushing, again in 1908, changed the scalp incision from a curvilinear to a vertical incision, with a definite purpose, that of allowing a deeper entrance into the temporal fossa and consequently to the floor of the middle fossa of the skull and to allow the opportunity of drainage in brain injuries and other conditions, such as brain abscess and hydrocephalus from the lower angle of the wound. In spite of this lapse of twelve years, it has not been longer than four weeks since I saw a case of fracture of the skull, done by a very excellent surgeon, with the old curvilinear incision. Perhaps then, my portrayal of the technical steps of the operation, as done by Cushing, will be tolerated by those of you not intimately familiar with this operation.

The operation of purposeful decompression, described by Cushing at that time, has remained the same and has been generally accepted by neuro-surgeons with a few improvements, mostly by him, such as: digital compression against scalp bleeding, silver clips for dural vessels, spoon spatulae to hold back the cortex, ventricular puncture to relieve pressure and for diagnostic purposes and finally the firm closure of the wound in three or four layers. The steps of his operation with some illustrative cases, I shall show directly.

I have observed from time to time cases of epilepsy, apparently neither of the Jacksonian type, nor associated with intra-cranial overtension, operated on by the operation of subtemporal decompression. They gave a history of a head injury, it is true, but evidently little or no attention was paid to the type of epilepsy nor to the condition of intra-cranial tension and some sort of a measurement of the cerebro-spinal fluid pressure. I have recently had two such cases, likewise with a history of injury, but where the history and focal symptoms were not sufficient to justify the hope of finding a lesion under an osteoplastic flap and where neither the optic fundi nor a spinal puncture gave me any evidence to justify a decompression. These cases of epilepsy are unfavorable enough even where there is evidence of a definite localizable lesion or increased intra-cranial pressure, so great, is the habit of epileptic seizures, once set in.

The indications for a subtemporal decompression are wide indeed but not too broad. The operation is useless where there is not some tension to relieve, in other words actually a pressure to decompress. Dr. Sharpe our guest, has very comprehensively grouped the indications for the operation as follows:

A. Decompression alone:
   1. Brain tumors:
      a. Large mid-brain and basal tumors.
      b. Large sub-cortical tumors—the removal of which would produce grave impairments such as paralyses.
   2. Selected cases of cerebral spastic paralysis due to intra-cranial hemorrhage at birth.

B. Decompression and exploration:
   1. Brain tumors—nonlocalizable tumors, usually situated in the frontal and tempero-sphenoidal lobes.
   2. Brain abscesses—nonlocalizable, usually situated in the tempero-sphenoidal lobes.
   3. Selected cases of organic epilepsy—Jacksonian in type, or associated with increased intracranial tension.

C. Decompression and drainage:
   1. Brain injuries with or without a fracture of the skull.
   2. Hydrocephalus—either of the internal or of the more common external type.
   3. Brain abscess.
   4. Early localized miningitis, especially due to otitic infections.

Plastic Operations on the Head.

Due to the high vascularity of the scalp and skin of the face, both pedicled and free grafts of skin heal very favorably in these situations. The most extensive skin plastics have been done about the head and face with excellent results.

Fascia, and to a less extent fat, is an excellent grafting material to be used in correcting deformities about the head and face, for it heals without reaction, becomes readily incorporated in the tissue into which it is ingrafted and heals even in the presence of a visible infection. I have used fascia for filling in cavities about the head and face, as a ground work and support of the mucous membrane and skin in restoring the cheek and to relieve the tension on and for the support of the stitch line in the operation for cleft palate. Much to my surprise and interesting to note in one case, the fascia conveyed the bone cells across the median line, with the formation of a bony palate. My illustrations show an example of fascial graft.

Skull bone is membranous bone and shows little tendency to regenerate and fill its defects, but, on the other hand, it offers a favorable situation for the grafting of bone, offering the grafted bone a good blood supply, in a fixed position. Purposefully laid decompression defects are not to be filled in. Only in those cases where the defect is in a prominent place not covered and protected by muscles, where there is no intra-cranial hypertension and where they are disfiguring, is the skull to be reconstructed. I shall demonstrate several cases of bone grafts into skull defects.

During the earlier days of our war surgery, I wondered at the destructive loss of skull bone and even brain substance sacrificed at the front in doing the so-called "debriedement." I never understood these widespread operations on the head, unless it was to give those of us at the base something to do in filling them out again and usually under the most unfavorable conditions, with a constant fear of stirring up a cryptic infection. Late abscesses of the brain were not uncommon.

Trifacial Neuralgias.

There are many interesting and important aspects of the surgery of the cranial nerves, though possibly the surgery of the trigeminus and of the trifacial neuralgias in particular, overshadows all else in this particular domain.

The deep peripheral operations of resection of the maxillary and mandibular branches of the trigeminus at the base of the skull have certainly been completely superceded by deep extracranial injections of alcohol into these nerves, near their foramina of exit from the skull.

I am not so sure about the superficial peripheral operations of nerve avulsion at the supra- and infra-orbital foramina, through the ascending ramus of the lower jaw respectively, and of the lingual nerve in the mouth, when the neuralgia is for a long time confined to one of these superficial branches. There is, it must be admitted, a great tendency to return and to spread to other branches.

Alcoholic injections can not be used for the first or ophthalmic division, so that the peripheral avulsion of the supra-orbital and supratrochlear branches alone or along with alcoholic injections of the maxillary and mandibular divisions must be given consideration.

In neuralgias limited to one of the two lower divisions and which may not possibly extend into other trigeminal areas, alcohol injections represent, unquestionably, the treatment of choice.

When the neuralgia has spread beyond its original area and come to involve that supplied by the adjacent divi-

sion, a trigeminal neurectomy must be contemplated, but if no preceding deep injection has been given, it may be useful not only in determining the type of the neuralgia, but in giving the patient some warning as to what the numbness resulting from neurectomy may amount to.

Alcohol injections are sometimes useful in determining in doubtful cases whether the syndrome is a true neuralgia of the tic douloureux type or one of the peculiar and rare pseudo-neuralgias, not amenable to relief either by injections or neurectomies.

The extra-cranial injections of alcohol are not entirely free from risks. There have been reported paralyses of the oculo-motor and abducens nerves, locking of the jaw from infiltration and fibrosis of the pterygoid muscles, permanent paralysis of the motor fifth after the injection of the mandibular division, (this may occur likewise after removal of the ganglion or even of avulsion of the posterior root), facial paralysis and labyrinthine troubles due to injections into the middle ear. The Eustachian tube is but a few m.m. from the mandibular branch at the foramen ovale. In no case should the injection be purposefully pushed to the point of injection of the Gasserian sheath itself.

Cushing states that: with such perfect and permanent results as may be secured today by trigeminal sensory root avulsion, the prolonged and repeated use of injections in refractory cases, which involves more than one division should be deplored. To substantiate his statement he reports 312 consecutive cases without a fatality and declares that the operation is practically free from risks and with a mortality lower than that of almost any other so-called major operation in surgery.

Dr. Cushing is a marvelously skillful operator and in his hands the risks are at a minimum, but untoward results do exist, nevertheless; the motor fifth can not always be spared and in the hands of most operators it must usually be sacrificed, with a temporary paralysis of the muscles of mastication on that side; anaesthesia of the cornea follows and the condition of keratitis neuroparalytica may follow this operation, as well as the ganglion resection. No harm, however, usually follows the anaesthesia of the cornea if the eye is shielded and taken care of for the first few weeks.

While the German school, with Krause as sponsor, still argues in favor of the ease of execution of the ganglion operation over root avulsion, certainly in this country the argument is without weight. All our neuro-surgeons agree to the added risks of the ganglion operation, such as more bleeding, more danger of cerebral nerve injury and greater probability of untoward results just cited for posterior root avulsion.

RENAL INFECTION.*

Dr. N. B. Edgerton, Columbia, S. C.

Infections of the kidneys go undiscovered creating havoc with a most important unit of their host's machinery more often than do infections in any organ in the human mechanism.

A great many patients are placed in the hospital and either the appendix, gall bladder, or either a portion or all of the organs of generation removed on the advice of the consulting surgeon, and with the tacit consent of the referring physician before proper investigation. Unless there is some difficulty in urination or some marked change in the consistency, color, or odor of the urine practically no note is made of the renal condition. The patient does not get well after the operation; does not get well because the operation represents a mistake in diagnosis. I have seen pyelitis of pregnancy with the pain confined to the region around McBurney's point, pus in the urine, spetic temperature in the seventh month of pregnancy operated for appendicitis; before a cystoscopic examination was allowed. There are certain findings which, when grouped and reasonable mentality exhibited in arriving at deductions will prevent much of this unnecessary surgery.

I once heard a prominent internist say that there were three types of appendicitis, (1) appendicitis that would get well of itself, (2) appendicitis that would terminate in gangrene unless operated, (3) appendicitis for revenue only. The last type has about had its day; people are demanding results—a pain in the right side means loss of

* Read before Tri-State Medical Society, Spartanburg, S. C., Feb. 16-17, 1921.

sleep, suffering and lessened earning capacity. The individual, your patient, is consulting you to be relieved of the pain; he does not care whether he has appendicitis, stone in the ureter, or an acute colon bacillus seminal vesiculitis. His wish is to get well and stay cured; he can't arrive unless your diagnosis is accurate. The only manner of making proper conclusions is to use all the clinical and laboratory data necessary for correct diagnosis. There are two diseases usual in the right side; inflammation in the appendix, or inflammation or stone in the ureter; others are less ordinary, and ordinary diseases are the first conditions to look for.

There are several etiological factors in renal infection:

(a) The organisms are colon bacilli, strepto and staphlo-cocci, gonococcus, tubercle bacilli, and others.

(b) Certain conditions predispose to these infections:

(1) Calculi in the kidney.
(2) Kinks in the ureter.
(3) Distant areas of infection—tuberculosis secondary to tuberculosis elsewhere, strepto-coccic pyelitis secondary to infections on the hand, arm, etc.
(4) Any lesions either extra renal, or in the tract itself that predispose to poor drainage.

Evidence for diagnosis consists in the symptoms, signs and laboratory findings. The symptomatology of renal infections, pyelitis and pyelonephritis is varied. The acute diseases may be divided into several groups: (1) Those commencing with general malaise and pain; (2) those associated with acute lumbar pains and constitutional symptoms; (3) those commencing with high fever and no localizing symptoms; (4) those with marked urinary symptoms; (5) those associated with vomiting and marked abdominal distension simulating obstruction of the bowel; (6) symptoms suggestive of disease above the diaphragm, pleurisy or pneumonia. The group in which the diagnosis is most often correctly made is No. 4 (marked urinary symptoms) and then the patient directs attention to the urinary tract. There will always be pus, some pus at least in the urine; in most cases a good deal of pus. In some cases several careful examinations may be necessary.

Evidence from a careful physical examination of the patient:

Signs: (1) Pain at the costo-vertebral angle, practically always in acute renal infection, palpation at the costo-vertebral angle will produce pain. With the fingers of one hand at the costo-vertebral angle and the other hand palpating anteriorly the thoroughly congested kidney receives pressure from an outside source and pain probably not already present is usually brought out. In other cases pain or tenderness is elicited just below the margin of the ribs, a little anteriorly to the mid-axillary line, probably due to pulling on the peritoneum adjacent to the inflamed kidney.

(2) Barney has called attention to a sign which is probably of value when the ureter is blocked in its lower third—draw an imaginary line from the umbilicus to the anterior superior spine of the ilium; pressure over a point one inch below and at right angles to this line strikes over the ureter. If the ureter is blocked by a stone, pus or stricture, pressure increases the already marked tension in a congested and full kidney and causes pain. If there is no blocking of the ureter, but an associated ureteritis with the renal infection, pressure here produces pain due to a stretching of the ureteral mucosa.

(Laboratory data.) 3. In both acute and chronic renal infections microscopic examination of the urine shows pus cells, the number depends on both the degree of infection and the amount of drainage. Pus in the urine produces an associated albuminuria when there is a large amount of albumin the source of the pus is usually the kidney; more than one per cent of albumin is not due to the presence of pus and always indicates a renal source. The presence of casts means a pyelonephritis. Pus casts are rare, it need not be a pus cast. With a pyelonephritis the kidney function test is lowered. I rely on the lowered phthalein function and the presence of pus plus casts for a differentiation between pyelitis and pyelonephritis; of course, in chronic cases, changes in the pyelogram outline.

I feel that these two conditions are most closely related and that there is always some injury to the parenchyma whenever the pelvis becomes infected.

Neither the nature of the infection nor the location can be determined by the microscopic appearance of the pus cells, neither can the location or the nature of the infection be determined by the epithelial elements or red blood cells accompanying the pus cells. Pus in the urine is nearly always associated with bacteria but there are two infections in which the bacteria may be difficult to demonstrate, namely, the tubercle bacillus and the gonococcus; neither grow on ordinary culture media therefore with an apparently sterile urine the presence of the gonococcus or tubercle bacillus are suggestive. There may be occasional cases in which the original bacteria has died out.

Catheterization of the bladder excludes pus of urethral origin after thoroughly washing out the bladder with a catheter left in place, the urine next appearing containing pus usually means renal infection.

In some acute cases, and in all chronic cases, a careful urological examination consisting in cystoscopic examination differential estimation of kidney function, radiograms and pyelograms is indicated. All cases with pus in the urine should be radiographed; however, an X-ray does not cover the field because colics are caused by pathology other than calculi. Therefore any case of right-sided pain, a case complaining of only discomfort in the right side who has any pus cells in the urine should be thoroughly investigated, investigated from the kidney angle. There are certain cases of the most serious type of renal infections which are "silent," "silent" insofar as local symptoms are concerned, the tubercle bacillus may be the invader. Any patient who consults you complaining of, first, loss of weight with pus in the urine; second, complaining of hematuria; third, complaining of cystitis, **remember** that kidney tuberculosis should not only be suspected but should always be eliminated. I believe that the diagnosis of cystitis insofar as urological diseases are concerned covers up as much ignorance as does the diagnosis of eczema in the domain of skin diseases, and I once read a definition of eczema which said that eczema covered all skin conditions of which the observer is ignorant. I think that this might be paraphrased to read "All conditions in the urinary tract of which the observer is ignorant are diagnosed cystitis." The better the case is worked up the fewer the diagnoses of cystitis.

Treatment Acute and Chronic:

There are certain well fixed principles in treatment. The first and most important thing to remember is that acute pyelitis is prone to relapse; your patient may appear well, you allow him up, the infection relapses and he is as sick as in the beginning. A good rule is to keep each in bed till the temperature has been normal one week keep the intestinal tract pretty well free of the colon bacillus by keeping the bowels well open. The diet should be stimulating but not entirely of milk, cocoa, fish, vegetables, etc. Internal medication consists in acid, sodium phosphate, grains 30, two or three times a day, to render the urine acid, and urotropin, grains 15, three times a day, half an hour before meals, and the forcing of water to drink.

The alkaline treatment is sodium citrate grains 30, every three or four hours. Some cases do better on the sodium citrate than on the urotropin, others get well on either. In certain cases the alternation of one with the other seems to work best.

Davis and Schwartz have shown experimentally that urotropin should be given as nearly as possible on an empty stomach preferably in 15 grain doses, that the urine should be rendered acid and that the longer the liberated formaldehyde is in contact with the urine the more organisms are killed; therefore, the patient should retain the urine in the bladder from two to four hours. In order to get the maximum mechanical irrigation of the pelvis of the kidney, your patient should force water to drink. This is a task, keeping a patient drinking water. The cleansing effect of water pouring through the kidneys is in my opinion more valuable than the long retention of concentrated urine in the bladder.

A number of cases will not yield to the above measures; to these cases you should make available the facilities of a competent urologist. Sometimes a catheter passed up the ureter provides such adequate drainage that the temperature will almost like magic come to normal. Other cases after the infection has had some chance to local-

ize will be benefited by the installation of argyrol or some other antiseptic directly into the kidney pelvis.

Chronic Cases: The synonym for success is drainage, adequate drainage. Measures should be directed, first to the individual, proper sleep, proper food and perfect attention to elimination through frequent bowel movements thus eliminating effete products and limiting the amount of possible colon bacilli absorption. The removal of pus areas other than that in the kidney, such as infection in the prostate, tonsils, teeth, etc. Second to the kidney, the correction of any pathology limiting drainage such as calculi, kinks, etc. Drainage to be adequate must be 100%. Intra pelvic instillations through the ureteral catheter every seven to ten days of silver nitrate beginning at ½%, and pushing the concentration until a local reaction is produced. Urotropin and acid sodium phosphate should also be administered internally in conjunction with the above treatment.

In cases demonstrated to be so far advanced toward pyonephrosis that adequate drainage is impossible, nephrectomy should be considered. There is no choice if tubercle bacilli are demonstrated, nephrectomy is the accepted measure.

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Discussion.

Dr. B. C. Willis, Rocky Mount, N. C.

Lest this discussion becomes too one-sided from the specialist standpoint, I would like to report a case from a general surgeon's viewpoint.

We had a patient to enter the hospital a short time ago for possible acute appendicitis. He was 55 years of age with previous history uneventful. His present illness was of about two-days duration, beginning with general abdominal pain localizing in the lower right iliac region near the internal ring. Leucocytes were about 15,000. There was tenderness at McBurney's point and downward to the internal ring, and also slight tenderness in the right kidney region. We made a routine urine examination, and found by microscopical examination pus and blood in the urine. We deferred operation, in view of the kidney findings, for four or five days. In the meantime we cystoscoped him and obtained pus and blood from his right ureter. About the fifth day there was evidence of a mass near the internal ring. Operation was performed—removal of ruptured appendix and drainage of small abscess. The urine gradually cleared up.

Dr. R. A. McBrayer, Sanatorium, N. C.

I cannot keep from reminding ourselves of this: As long as we have pyelitis only it is all right to push the water. However, I do think that when we make a diagnosis of pyelitis we ought to try and know how much nephritis we have before we begin to push too much fluid. We know well that fluid does not go through the kidney like it would go through an inert filter. You have a damaged kidney and you push the water only to add additional work to a kidney that needs rest—not additional work.

As long as there is a very little bit of nephritis the water still may help and do good, but I don't think we ought to overload an injured kidney when we know that the kidney has to get rid of that extra amount of fluid intake—by sheer work.

Dr. T. M. Davis, Greenville, S. C.

I enjoyed Dr. Edgerton's paper on infection, and I am just getting up to lay certain emphasis on a few things. One thing is that I hope no man will subject a patient with either an acute abdominal condition or any other condition to an abdominal operation without first having made a urinalysis. It is criminal and inexcusable, because any man who is equipped to do an operation of

the abdominal type certainly should have the facilities for doing microscopical urinalysis. In doing that, if he finds pus in the urine, he should hesitate before opening that abdomen for anything that is not certainly there, for only recently a patient who is under my care now, was seen by one surgeon, who thought she had appendicitis, and by another who decided on immediate laparotomy. They opened the patient's abdomen and much to their disappointment found it was absolutely normal except for three months' pregnancy. Then they closed the incision and expected the woman to get well. After a period of several weeks she was referred to me, and I found she had right-side pyelitis of colon bacillus type. I also found that the pregnant uterus was interfering with the drainage and that it was necessary to produce an abortion before the patient responded to treatment.

I am glad Dr. Edgerton brought out the point of frequent relapse, because a certain urologist in this state told the husband of a patient of mine that the patient ought to be cured in six treatments, and as this patient had a relapse requiring some twenty lavages, I am now having trouble in collecting my bill.

Dr. M. H. Wyman, Columbia, S. C.

I think that Dr. Davis' statement that pyelitis could exist without pus, might be misleading. I cannot imagine, certainly I have never seen, an active pyelitis with just the infecting organism present and no pus formation. If the urine had been carefully centrifuged for a sufficient length of time, and bacilli but no pus found, one could not say the patient had an infected urinary tract.

One word about the stone in the prostate that Dr. Edgerton reported for Dr. Taylor. This is one operation that should be done by the perineal route, not only on account of drainage but so that the cavity can granulate up from the bottom before another stone forms. I cannot quote my authority on this statement. There is not really any need, but I am sure that I read a very interesting article recently, and that was the one idea in the paper.

Dr. N. Bruce Edgerton, Columbia, S. C.

In regard to the question of appendicitis and pyelitis: In pyelitis after passage of the ureteral catheter, there should be a lowering of the temperature and a lowering of the leucocyte count. With appendicitis there should be a gradual rise in the temperature and in the leucocyte count as the infection advances.

I think Dr. McBrayer is eminently correct in saying that water to drink should not be forced on all of these cases. In a true pyelitis, forcing water to drink over the usual period of two or three weeks does no harm, and must do good, for it promotes drainage.

These cases of pyelitis present a problem in which the physician will have to use a good bit of judgment. Each individual case demands special care.

GLOBUS DIOSPYRI VIRGINANAE SEMINUM—REPORT OF A CASE.*

By W. Lowndes Peple. M. D., F. A. C. S.
Richmond, Va.

Quirico Sotgia, as his name would imply, is an Italian.

He came from the dispensary to my clinic at the Memorial Hospital on January 20th, with a lump in his stomach and an inability to speak or comprehend the English language.

With much patience and labor we were enabled to elicit one definite fact, and one only.

He had eaten of fruit and been made sick.

So had Adam. So have we all, each and every one of us in all this wide world, provided he has lived long enough to be weaned.

We have all eaten of fruit and been made sick; some one kind, some another; some once, some many, many times.

It interested me greatly but did not help me, for it is the oldest of all stories—the story of the Creation itself.

"What kind of fruit, Quirico?"

There was a shrug of the shoulders—a shake of head.

I had left the Garden of Eden only to find myself standing before the shut front door of the Tower of Babel.

He was a thin, sallow fellow and the

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* Read before Spartanburg meeting of Tri-State Medical Association, Feb. 16-18, 1921.

lump was plainly evident, so we put him down as a probable case of pyloric ulcer or carcinoma and sent him on for X-ray examination.

The roentgenologist reported a rather unusual condition.

There was no ulcer nor cancer, but there was a large mass which could be readily shifted from one end of the stomach to the other.

It was transparent of course, but made a large globule or filling defect in the Barium meal.

His opinion was that it was either a polyp on a very long pedicle or a foreign substance such as a hair-ball.

This was most interesting. If only we could get a history!

I thought of my friend Bucceroni, who was with us in France.

Would Louis assist a comrade in great need, and also aid a fellow countryman in dire distress.

Surely he would—and all was easily arranged.

"He is a native of Sardinia," said Bucceroni, "but speaks Italian very well."

To this I readily assented.

He is fifty-two years old and a farmer by profession, but has worked as a laborer for the past eight years, since coming to this country.

He has never before been seriously ill. There is no history of Lues. He has not had constipation, indigestion, or dyspepsia. He has not vomited nor passed blood. There is no marked loss of weight.

"Has he ever worked in fabrics, threads, or yarns?" "No."

"Has he had to do with the shearing of sheep or the carding of wools?" "No."

"Perhaps in Sardinia, his home, he has made nets for the taking of little fish?" "No. He was a farmer and dug in the ground. Since the war began he has worked in an aviation camp as a laborer."

"He was a well man, working at Hopewell, Va., up to December 16th. On that morning he arose as usual, but took only a cup of coffee for breakfast. At dinner he ate very freely of fruit, making two meals at one time of this alone.

"What kind of fruit?" "He does not know. He thought at the time that it was very good, but now—no!"

"Where did he get the fruit?" "Off of the tree. He saw others eating it, and made two meals of it himself at one time."

Here was light at last! What tree in Virginia bears ripe fruit in mid-December? But one—the Diospyros Virginianae.

Evidently this tree that is the crowning glory of Fluvanna County does not flourish along the banks of the Piave. It is unknown in the home of the Garibaldi.

Its luscious fruit, the delight of all natives of my State including canines, marsupials, and Afro-Americans, is the despair of the dwellers in Istria. It is our meat. It is their poison.

"Did he eat the seeds?" "He ate everything."

"Did he spit out the seeds?" "No. He ate all. He spit out nothing."

"Did he pass the seeds?" "He thinks not, but does not know."

"Did he vomit the seeds?" "No, but each day, not missing one in five weeks, he has put down his throat the finger and tried to vomit. But nothing comes; only a little pinkish water that tastes and smells always of the fruit, and it is very, very bad."

On January 25th he was taken to my clinic and his case was thoroughly gone into with the students, taking up the history, laboratory and physical findings.

We then made a summary, about as follows:

"Here is a man with a lump in his stomach. He has none of the symptoms of ulcer or cancer, except the mass. His blood picture shows nothing abnormal.

His chief complaint is gastric distress and nausea, which makes him unable to work. He wants to empty his stomach but cannot.

His trouble is definitely associated with the eating of fruit on December 16th. On that day he was well. Since then he has been sick.

He was quite ill for several days and was under the care of a physician, who gave him purgatives. This helped him, but did not cure him.

Here is the mass in the epigastrium. We can shift it from under the ribs on the left side over to the median line.

The roentgenologist tells us it is either a polyp on a long pedicle or a foreign mass. He says there is a large

mass which displaces his Barium, and that under the fluoroscope he can shift it from one end of the stomach to the other.

There is one important negative fact which he did not record. If the mass was really a polyp there should have been a dimpling of the stomach wall where the pedicle was attached, when the mass was pushed to the end of its tether. No such dimpling was noted.

The history of its abrupt onset is not the history of such a growth. I think we may exclude it.

We then have by exclusion a foreign body. What is its nature?

We have the definite history of this man having eaten freely of the fruit of the Diospyros Virginianae on December 16th, just forty days ago. It is definitely known that he swallowed the fruit, seeds and all. He did not spit them out or vomit them up. He can not say that he has passed them.

The seeds of this fruit are large and flat. They are covered or surrounded by a gluey-like mass of pulp which might readily make them mass or mould into a ball.

When he vomits now he tastes the fruit which he ate forty days ago. He has eaten none since, and doubtless never will again.

I think our diagnosis can be made: Globus Diospyri Virginianae Seminum.

The next question is: What is the safest method of obtaining relief?

I have advised with several colleagues, and all advise gastrotomy.

If on opening the abdomen we find the mass is easily broken up, we may decide to crush it and pass it down through the pylorus. This would have the disadvantage of possibly causing an obstruction further down, but the advantage of leaving the stomach unopened.

We make the right rectus incision as for gastric operations—and here is the mass. You see the stomach is not adherent, nor are its walls congested.

The mass is larger than I had thought. It is irregular in outline.

It is very hard to the touch. I think I would do much harm to the gastric mucosa if I tried to crush it.

I slip it over to the least vascular area, here to the left of the median line, and incise the stomach from above downward in the line of its vessels.

I deliver the mass. Our diagnosis is verified—you can see the seeds sticking out of it like peanuts in peanut candy.

The stomach contains some fluid and bile but there is no evidence of erosion on the surface that is visible.

The incision is closed with chromic gut, with a few sutures of linen for safety. The abdominal wound is closed in the usual way and the operation is completed.

The specimen when passed around was of a greenish yellow hue, with a strong odor of the fermenting fruit. It was about three and a half by three inches. It is very irregular in outline and compact in structure. The seeds seem firmly embedded in a dense fibrous mass.

I will pass it around. It has dried out and shrunken, and has lost about one-third of its size and much of its weight.

The patient had no unfavorable symptoms and made an uneventful recovery.

THE EYE FINDINGS OF EARLY PITUITARY DISEASE.*

Henry L. Sloan, A. B., M. D.,
Charlotte, N. C.

Visual disturbances have been observed and recorded from the very first in studies of pituitary disorders. One of the very early observations on pituitary disease was made in the dead-house with the ante-mortem diagnosis of "amaurotic insanity."

Until about thirty years ago the pituitary body was considered a non-functioning cerebral appendage. Marie in 1889 connected it with acromegaly. Other investigators later added much light to our knowledge of the growth, the gross and minute anatomy of this gland. but it was not until 1910 Harvey Cushing in his epochal work on the hypophysis cerebri gave us the modern conception of its physiological and clinical manifestations. It was he who also gave us the term dyspituitarism to include those conditions caused by perverted hypophyseal secretion. This, as is well known, is a clinical combination of hyperpituitarism and hypopituitar-

* Read before the Spartanburg meeting of the Tri-State Medical Association, February 16-18, 1921.

ism with the limitations of acromegaly on the hyper-side and Froelich's syndrome on the side of under-activity. The "hormonic signs" and the symptoms of these disorders are well known. "Dyspituitarism suggests in a mild way the phenomena of hibernation." The three most common symptoms are "a tendency to sleep, without previous lack; muscular inactivity, without loss of power and deranged carbohydrate metabolism."

These dyspituitary disorders are of interest to us as oculists because of the fact that they are frequently caused by neoplasms of the pituitary body, which in turn produce visual disturbances only by local pressure on the optic nerves, tracks or chiasm. Frazier reminds us that the pathological deviations of the pituitary are not unlike those of the thyroid. "As with the thyroid, so with pituitary, the most common lesion is the adenoma, in both instances often with cystic developments." It is his estimate that 75 per cent of pituitary tumors may be classified as adenomata. Malignant disease is rare, one hopeful feature of an otherwise serious situation. Ocular disturbances are present in 50 per cent of these cases according to Knapp.

It is not entirely correct to speak of the eye findings of early pituitary disease. For while in many cases "failure of vision" may be the only complaint of the patient, yet the eye findings are early only in that they many times make their appearance in advance of the hormonic changes by which pituitary diseases makes known its onset. Cope in a careful study of autopsy records and findings of reported cases at the operation table says: "It seems certain that many cases with visual symptoms must have considerable intra-cranial extension of the growth. I have searched the literature of pituitary operations fairly thoroughly," he continues, "and have not yet found a single case with optic symptoms in which verification at operation or autopsy was permitted, which did not show a large intra-cranial extension. We conclude, therefore, that all pituitary tumors which come to operation for symptoms other than acromegaly have long before burst the bounds of the fossa." Frazier concurs in this, and adds that eye symptoms could hardly be caused without extrasellar extension. The extension is more often forward and upward.

Symptoms—The first symptoms that often lead to diagnosis of pituitary disease are not very striking. Headache —frontal and occipital and by many described as a rather typical bitemporal headache, is as a rule present and not severe. It is made worse by use of the eyes, and the eyeballs are described as "sore." Blurred vision of rather long duration is a common symptom. These appear to be no more than cases for refraction. However, glasses will not help them.

On further inquiry the patient may tell you that his vision failed first to one side—the latter true in two of my three cases. (The patient may appear a little drowsy.) You may also elicit a history of early menopause, loss of sexual desire, polydipsia, polyuria, and an excessive appetite often for sweets.

Of 32 cases of pituitary tumor reported by Benedict of the Mayo clinic:

1. Lower visional acuity in one or both eyes was present in every case.

2. Lower visional acuity in one eye with 6/6 vision or better in the other five.

In nearly all of his cases the onset of the visual disturbance was gradual. In one case visual disturbance was noted 19 years in one eye and four years in the other before coming to clinic. In one of my cases the trouble began fourteen years ago in one eye and nine years in the other; in a second, it ran back nine years in one eye and was just beginning in the other; in a third, ten years in one eye and one year in the other. Ocular palsies rarely present.

Ophthalmoscopic Examination — In the earlier cases you will see a slight pallor of the disc without loss of substance; the pallor is uniform, as a rule. Benedict has described it as a rather characteristic waxy, yellow discoloration of the disc, with loss of some of its fine vessels, but with no loss of substance. In optic atrophy the falure of vision and atrophy go hand in hand. The pallor in hypophyseal diseases may be quite marked with hemianopsia and 20/20 vision, a very significant fact. In toxic neuritis the vision fails first. In pituitary disease the nerve is pale, but disc margins are well defined. The physiological cup and lamina cribosa are normal. The optic nerve in these

cases, according to Cushing and Walker, is in a state of physiologic block and add "despite the so-called atrophic pallor of the disc in patients having visual defects resulting from lesions in the chiasmal regions. The histological examination of the nerves fails to show the expected degree of fibre degeneration unless the process has been of long duration."

The recuperative power of the nerves in such conditions is remarkable; useful vision may be restored after almost complete blindness has been present for months. It is claimed that pallor begins on the average about four months after onset of visual symptoms, and also that great improvement in vision can be expected after operation if vision has failed not longer than a year, in a few cases even longer. Choked disc is occasionally present.

Visual Field Changes—Bitemporal hemianopsia is very suggestive, almost pathognomonic of pituitary new growth, yet it is a rather late finding. (This condition has been reported in six cases of Tabes by Fuchs and very rarely in other conditions.) This is no more than we should expect in pituitary tumors from direct or indirect pressure on the chiasm, because of the nearness of the latter to the sella and its contained gland. However, in these conditions homonomous hemianopsia is not infrequent. De Schweinitz says: "Although it is true that homonomous hemianopsia due to an optic tract lesion, is less common than is bitemporal hemianopsia, I doubt if it is fair to say it is very rare in hypophyseal tumor."

In a report of 271 cases of pituitary disease by Cushing and Walker, 183 cases showed tumor manifestations and 148 showed field defects. Bitemporal hemianopsia was present in 47 cases. Homonomous hemianopsia is present in 22 cases. The remaining 79 showing field disturbances were blind in one eye, so that the field defects could not positively be determined. They therefore, find homonomous hemianopsia about half as common as the bitemporal form.

Cushing's classification in this series of cases includes tendencies to bitemporal defects, rather than the clear-cut text book hemianopsias. He lays special emphasis upon the character of the advance of these field defects as follows: "The primary defect usually involves the color boundaries alone in one upper temporal quadrant. This is followed by a more or less complete hemiachromitopsia possibly with a plant in the upper temporal form field, which gradually spreads downward until most of the temporal field is involved. In all of these cases the color fields are involved first, the form field later. The macular area is often spared for a long time, but finally it becomes implicated in turn first in its temporal half, finally the whole central area enters the blind field, and the nasal half in turn progressively shrinks away from the center. It is to be emphasized that rarely are the two eyes affected in equal degree, and also, that after operation, restoration occurs in reverse order." De Schweinitz and Halloway have further called attention to early field defects in pituitary growths in the form of scotomotous changes in and about the central field, which antedate the larger field defects often by months, later to terminate in various forms of temporal field defects. Nettleship also calls attention to central scotoma in hypophyseal tumor as an early symptom which goes on to temporal hemianopsia. A striking characteristic of these field changes is the great variability from day to day. De Kleijn notes that if they are taken daily, hemianopsia appears and disappears and may even pass into a concentric contraction." This was strikingly true in one of my cases.

Diagnosis—Diagnosis should not be made by the eye findings alone. X-ray will furnish great help—often show an abnormal sella with enlargement and the destruction of the clinoid processes. The neurologist's aid should be enlisted. In this connection it is interesting to note that in Cushing's clinic the roentgenologist pays no attention to sellar measurements, but makes his diagnosis from its relation to the general configuration of the skull.

Report of Cases.

Case No. 1—Mr. S. P. S., age 52, white. O. D. V. = 20/20. O. S. V. = 20/30 — 3.

Patient was first seen March 15, 1920.

Complaint—Eye lids burn and sting. Eyes tire easily—and headaches.

H. P. S.—Patient says he has always been well and strong, having been sick but once with scarlet fever when a

child. Says he has had headaches and pain in his eye for a number of years, worse after reading. Left eye has troubled him for eight or nine years. His headaches are frontal and occiptal in location. During this time his glasses have been changed many times without relief.

Refraction:

O. D. V. Plus .25 Axis 15 = 20/20 plus 3.

O. S. V. Plus .37 Axis 120 = 20/30.

Patient soon returned with the same complaint. He said that vision was somewhat blurred with the left eye. He saw as through a pocket in a cloud and could not see well to his left side. He wished to read the lines of the test chart backward with the left eye. This suggested a field defect. Loss of red and green color sense was noted. No cause for a toxic amblyopia could be found. Many perimetric examinations were made up to August. Some of them showed temporal hemiachromatopsia, left and later the form field was cut off in left temporal half. There were many variations. Later slight upper "temporal slants" were noticed in color fields of right eye. Slight uniform pallor of left optic disc. Examination of nose negative. Blood Wasserman negative. Patient never used tobacco or alcohol. X-ray showed excavation of the sella. Neurological examinations negative. Patient was sent to Dr. Hiram Woods and Dr. Dandy, who concurred in the diagnosis of pituitary neoplasm. Pupils slightly unequal and left reacts very sluggishly.

Patient refused operation, as he was told that there was 15 per cent mortality operation on these cases. Observation was continued until early in January, 1921. Vision had changed to: O. D. V. = 20/20. O. S. V. = 20/200. The defects in right visual field had become more pronounced. I took patient to Dr. Harvey Cushing, who confirmed our diagnosis. He did a sella decompression and removed part of a very firm adenoma. Improvement in vision of left eye has been steady.

Case No. 2—Mrs. J. C. B., age 35, housewife, white. O. D. V., H. M. nasally; O. S. V., H. M. nasally.

C. C.—Failure of vision, slight headaches, pain in lower abdomen, polyuria and polydypsia.

F. H.—Both parents living; father paralyzed, mother has rheumatism.

P. M. H.—Usual diseases of childhood—typhoid fever, (10 years ago) and had influenza.

S. H.—Married—one child, 10 years of age. Child said to have "kidney trouble." Child seems normal in growth and other ways. No miscarriages.

H. P. I.—Vision began to fail in right eye over ten years ago. Left vision failed during the last year. Could read newspaper until about one year ago. No pain or inflammation about eyes. Has always had headaches—not very severe—frontal and occipital in location. Lips dry and she drinks a lot of water.

Menstrual History—Menses began at 11 years of age. Regular four to six days until 16 years of age. Then began to have amenorrhea—missing for six months or more. Menses stopped at age of 32. Feet and legs always cold. Patient is rather sluggish.

Pupils equal and react very sluggishly to light.

Ophthalmoscopic Examination—Uniform bilateral primary optic atrophy. Blood Wasserman negative: Two tests by different men.

Roentgenologist reports "obliteration entirely of pituitary fossa."

Diagnosis—Dyspituitarism (pituitary tumor).

Case No. 3—Mr. P. F. C., age 66, minister, white.

C. C.—Failure of vision.

P. M. H.—Negative.

F. H.—Negative.

H. P. I.—Patient says he has always enjoyed splendid health.

Fourteen years ago had an attack of severe pain in right eye. There was no redness of eye. Lasted six weeks and left eye crossed. (Ext. squint right.) Vision began to fail after this. Four years later was examined by an oculist in Atlanta and told he had a cataract in this eye. First noticed that he could not see well to the right side. Nine or ten years ago noticed same thing in left eye. O. D. V. = Hand movement nasally. O. S. V. = 1/200.

Pupils enlarged—equal and react sluggishly to light. Patient yawns between questions when history was being taken. Sleeps almost upon sitting, and moves about very sluggishly.

Examination of Fundi—Primary optic atrophy bilateral.

Fields—Bitemporal hemianopsia.

X-ray—"The sella turcica is very large with irregular outline and the posterior clinoid processes are entirely gone."

Diagnosis—Dyspituitarism.

These cases are illustrative of the quiet, almost insidious onset of the results of pituitary tumor. Thyroid disease is certainly not rare. Cushing tells us that "hypophyseal disorders are now recognized almost as often as those of the thyroid, and there is no reason to believe that one of these two glands is affected any oftener than the other." This being true it behooves us as ophthalmologists to keep in mind the ocular phenomena of pituitary struma, and see to it that these conditions do not escape our detection. The responsibility of diagnosis is in great measure on our shoulders. Operation is in the great majority of cases for improvement of vision; the later is the criterion of a successful result. Careful charting of visual fields is our main stay; thereby we should add one more weapon to our armamentarium in the treatment of so-called primary optic atrophy.

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Discussion.

Dr. Joseph T. McKinney, Roanoke, Va.

It might be of interest in regard to the cases of pituitary tumor reported by Dr. Sloan, to report a case referred to me several months ago, of a male, age 26, who suddenly developed a bilateral hemianopsia. The oculist finding this condition, referred him for X-ray examination of the head and accessory sinuses. Lateral plates of the head showed the shadow of a definite tumor about the size of a walnut, in the region of the sella-turcica. In the stereoscopic plates you could see distinctly the clear-cut outline of the tumor. The sella-turcica and dorsum sella were completely destroyed, and a tumor of the pituitary gland was reported. The patient was sent to Dr. Harvey Cushing, who operated, finding a cystic tumor of the pituitary gland. In less than four weeks the patient was back home and attending to all of his duties. The case is unusual, in that the symptoms came on suddenly with no previous history of ocular or pituitary disturbances until two weeks prior to the operation.

Dr. Gray brought out all of the salient points in X-ray examination of the head. In the diagnosis of brain tumors the necessity of the co-operation and collaboration of the opthalmologist, neurologist, internist, roentgenologist, and brain surgeon is absolutely essential.

Dr. Emory Hill, Richmond, Va.

I think that the ophthalmologist often fails to give the help he might give in the diagnosis of brain tumors because of certain careless habits of speech. Formerly the terms optic neuritis, choked disc, papillitis and papilledema were used interchangeably. This is a mistake, as these terms do not mean the same thing. Choked disc or papilledema is an edema produced by increased intra-cranial pressure and is an important sign of brain tumor. Papillitis or optic neuritis or neuroretinitis is an inflammatory condition never pro-

duced by increased intra-cranial pressure alone and is entirely different in its significance from choked disc. The neuroretinitis produced by disease in the sphenoidal and posterior ethmoidal sinuses is well-known, but a choked disc is never produced by sinus disease alone. There are cases in which the relative degrees of edema and of inflammation are difficult to determine, but these are rare; usually the eye-ground picture is clearly one or the other condition. We confuse rather than help the neurologist and neurologic surgeon unless we speak and think clearly in regard to optic nerve-head changes.

In pituitary cases we still are inclined to demand bitemporal hemianopsias as essential to the diagnosis and to regard scotomas as inconsistent with pituitary lesions. Both of these ideas go back to a period before Cushing's work brought pituitary disease into prominence. While it is true that bitemporal hemianopsias means involvement of the optic chiasm, this is a late development. It is much more important to recognize early pressure upon the chiasm as manifested by an upper temporal defect, first in color fields. Scotomas are also present as de Schweinitz and Halloway have emphasized. Certainly, we must not let the presence of scotomas prejudice us against a pituitary lesion. It is important to recognize that the usual primary atrophy of the optic nerves in pituitary pressure may have superimposed upon it a choked disc when general increased intra-cranial tension has supervened. It is likewise important to remember that certain evidences of pressure upon the optic nerve fibres at or near the chiasm may be due to other causes than an enlarged pituitary gland. Whether or not the latter is responsible for the pressure will be determined by other diagnostic signs. The opthalmologist can only say that the ocular evidence indicates that the lesion is in the region of the optic chiasm.

Original Communications

CHRONIC GASTRIC AND DUODENAL ULCERS.*

C. S. Lawrence, M. D., Winston-Salem, N. C.

When patients suffering with gastric and duodenal ulcer get to the surgeon they, as a rule, have reached the chronic stage. They give a history of gastric disturbance going back over a period of years, and usually tell a story of having been cured, or relieved of their symptoms, several times during their life of indigestion.

There is no question but what a great many acute ulcers of the stomach and duodenum are cured by the internist. On the other hand, a great number of the so-called cures are simply those cases that have a let-up in their seasonable exacerbations.

In the diagnosis of gastric and duodenal ulcer we have pinned our faith to the history and Roentgenological findings. A careful anamnesis is the most important and requires experience and tact on the part of the historian.

There is no pathognomonic sign of ulcer of the stomach or duodenum, but the history is rather typical. A patient complaining of indigestion, extending over a period of years with seasonal crisis, usually in the fall or spring, and sometimes both fall and spring, with pain coming on at a definite time after food, relieved by taking food, soda or something that will dilute or neutralize the acid gastric juice, sour stomach, heart burn or water brash is very suspicious of ulcer. Stomach ulcer pain comes on sooner after taking food than does duodenal pain. As a rule there is more gas in the stomach than duodenal, pain at night at a stated time is more common in duodenal than gastric ulcer (one of my cases was awakened at 11 p. m. several nights in succession). Hemorrhage is not common, occurring in about twenty per cent of the cases. Melena is also frequent, occult blood is of no value and is not looked for in our cases. Patients are usually well nourished because they eat to releive pain.

The x-ray in the hands of a competent Roentgenologist is invaluable. In our work by my associate, Dr. G. C. Cooke, we give the patient an ordinary meal the evening before the examination, at 8:00 p. m. he gets fifteen seedless raisins, at 8:00 a. m. the stomach is pumped and a search made for skins of raisins. At the same time he is given a motor meal of three ounces of Barium in about four ounces of cream of wheat. At 2:00 p. m. he is screened and given four ounces of Barium in one quart of buttermilk. The general contour of the stomach is noted, the stomach manipulated with the hand, after this a series of plates is made. An ulcer destroys the tissues of the stomach wall forming a cavity, the Barium fills this cavity and we get a niche which can be seen with the Roentgenoscope and will show on plates. Irritation of the circular muscular fibers of the stomach is caused by the presence of an ulcer, causing contraction which cuts the opaque meal in two and we get an incisure, also seen at the screen and on the plate. Such phenomena often give the appearance of an hour glass stomach.

Duodenal ulcers cause an irregularity of the duodenal cap, evidenced by defective filling hypermobility of the stomach and where obstruction exists, a retention after six hours. Chemical analysis has been of very little help to us in diagnosis.

A brief analysis of eighteen cases of chronic gastric and duodenal ulcers operated on at the Lawrence Clinic (I have included two cases of cancer of the stomach because of the typical history of gastric ulcer going back over a period of years). There were eleven male and seven female, average age 41, youngest 29, oldest 60. Duodenal ulcer 15, gastric three. **Occupation:** farmers, six; females living on farm seven; bookkeeper, one; merchants, three; physician, one. **Complications:** gallstones,

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three; perforating, acute, one; chronic, one; cancer, two.

Treatment:

1. Posterior gastro-enterostomy appendectomy, 9.
2. Posterior gastro-enterostomy, 3.
3. Closure of acute perforation, plication, 1.
4. Posterior gastro-enterostomy Cholecystectomy, 1.
5. Posterior gastro-enterostomy resection of ulcer and Cholecystectomy, 1.
6. Pyloroplasty appendectomy, 1.
7. Gastrectomy (Partial) Belroth No. 1 for carcinoma, 1.
8. Posterior Gastro-enterostomy, pylorectomy cholecystotomy 1.

It will be noted that posterior Gastro-enterostomy was performed on all cases with exception of three, one was a case of acute perforating duodenal ulcer of 48 hours' standing, which was rapidly opened, the perforation closed, drainage instituted.

2. A case of duodenal ulcer near the pylorus in which the stomach emptied well and in good time so it was decided to try the method of pyloroplasty. This case has not done so well as the gastro-enterostomy cases have.

3. A case of carcinoma starting on the lesser curvature near the pylorus. The tumor was freely movable, a Belroth operation No. 1 was performed.

Results:

There have been no operative deaths in this series, one case (partial Gastrectomy) died seven days following operation of broncho pneumonia. The bowels had moved several times and the patient had not vomited. Autopsy showed a good, firm union of anastomosis and no peritonitis. One case of duodenal ulcer in a man, 29, has continued to have trouble in the form of pain, sour stomach and occasional vomiting. I am of the opinion that this case was too acute and should not have been treated surgically. I am, however, not operating on acute or even sub-acute cases where there is a good stomach motility and when pain and discomfort can be controlled by medical means.

The one other cancer case included in this report improved after gastro-enterostomy but died within a year. The remaining fifteen cases have excellent results and I see or hear from all of them frequently.

Posterior gastro-enterostomy up to this day holds the balance of power in the treatment of Chronic Gastric and duodenal ulcer. Additional surgical procedures frequently have to be applied in order to obtain best results in the case, such as resection of the ulcer, plication, dealing with adhesions, gall bladder and appendix. Such conditions must be left to the surgical judgment of the operator. It would be foolish to lessen the chances of recovery of one's patient 15 to 25 per cent by resecting a densely adherent and bound down duodenal ulcer, when as a rule such cases get along about as well without resection. On the other hand, we think it is good surgery to resect the ulcer, especially stomach ulcer, when easy of access and the subject a good risk. One of our most brilliant results was a case of duodenal ulcer in a man 60 years old and of 20 years duration, with a retention of ¾of the meal after six hours, contracted gall bladder containing one large stone where we performed posterior Gastro-enterostomy, resected the pylorus and proximal portion of the duodenum, removed the gall stone and drained the gall bladder. It has been proven clinically that pain in gastric and duodenal ulcer is caused by the acid gastric juice coming in contact with the ulcer. The alkaline treatment of ulcer is recognized by the leading clinicians and patients suffering with this affection find that their pain is relieved by taking an alkali. Gastro-enterostomy automatically alkalinizes the stomach by the admission of jejunal contents which is alkaline. The gastro-jejunal opening also assists the stomach in discharging its contents, not all the stomach contents pass through the new opening by any means, unless the pylorus is occluded. C. H. Mayo has aptly stated that posterior gastro-enterostomy is a well known agricultural principal applied in surgery. A constantly wet acid soil is tile drained and the surface limed.

I wish to give due credit for the feeble effort made in this paper on this much discussed subject, to the visits made by the writer to the leading Clinics of the world and I especially mention the Clinics of Dr. John B. Deaver, Dr. J. M. T. Finney and the Mayo Clinic in this country; Moyhnehan & Lane in Europe; The Journals, Surgery, Gyn. and Obst.,

A. M. A., published papers of the Mayo Clinic, Annals of Surgery, etc.

THE IMPORTANCE OF SPINAL FLUID ANALYSES IN SYPHILIS.*

Victor R. Small, M. D., Raleigh, N. C.

We know the normal spinal fluid as being a thin, colorless, odorless, tasteless fluid having a specific gravity of from 1.003 to 1.008. Its chemical composition is as follows: (1)

Water, 98.74 per cent.

Urea, phosphates, and potassium salts, .15 per cent to .35 per cent.

Dextrose, .4 per cent to 1 per cent.

Globulin and albumos, .03 per cent to .6 per cent. The amount normally present is difficult to determine but it has been estimated to be from 60 c. c. to 80 c. c.

This fluid was formerly thought to be an ordinary tissue lymph bathing the nervous structures. Now it is regarded as a true secretion of the choroid plexus. It fills the subarachnoid space, thus forming a pad enclosing the brain and cord on all sides, and through the foramen of Magendie, is in free communication with the ventricles of the brain.

Its functions may be stated as follows: First, it protects the nervous structures; second, it aids in maintaining physiological equilibrium during contraction and dilatation of the cerebral vessels and in certain pathological conditions such as tumors, etc.; third, it takes up and neutralizes certain substances formed by metabolic changes in the nervous tissues. Its absorption is through the venous channels. As occasion demands, it may be secreted or absorbed very rapidly, and it has been observed that, following a puncture, the fluid is drained at the rate of 100 c. c. per hour and this rate of flow maintained for days. (2)

If we bear in mind the methods of secretion and absorption of this fluid, together with its office of acting as a neutralizing recipient of certain katabolic substances, we can readily understand why, in certain pathological conditions of the brain and cord, we can expect to find alterations in the quantity and composition of this fluid. In no chronic pathological condition of the nervous system are the spinal fluid changes so constant or of such great diagnostic importance as in syphilis.

The Varied Pathology of Nervous Syphilis.

The pathological lesions of syphilis of the nervous system are as varied as are the clinical manifestations of this disorder. According to Nonne (3), these pathological changes may be grouped under separate headings. First, the *acute meningeal irritation* which is very frequent in the early stages of syphilis, but which, in a majority of cases, disappears. However, in certain cases areas of meningeal irritation persist, or the infection for a while lies dormant, and these cases later develop some form of nervous syphilis. The second, or *chronic hyperlastic inflammation*, is most often meningeal at the onset. Though eventually the meningitis or syphilis involves all three of the coverings of the brain cord, in most cases a leptomeningitis at the base of the brain is the starting point of the disease. Here develops a hyperplastic inflammation with an extensive infiltration and the formation of connective tissue elements. The third is the *syphilitic new growth or gumma*. Most often gummatious nodules develop along with the hyperplastic inflammation. Observation has shown that gummata develop in about twelve per cent of all cases of syphilis, and as to the organ of predilection, the brain ranks third, being only exceeded by the liver and kidneys. Within the brain proper they may develop within the frontal, parietal, temporal or occipital lobes, within the cerebellum, medulla, pons or hypophysis, or within the fourth ventricle. *Blood vessel changes* may be considered under the fourth heading. The vessels may be compressed by gummatous tumors causing narrowing or displacement of the lumina or the formation of thrombi. The vessels themselves may be the seat of pathological changes which start with a primary irritation of the endothelium and are followed by connective tissue proliferation, resulting in sclerosis or aneurysm. Sternberg taught that the majority of the clinical manifestations of syphilis were caused

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by the changes in the blood vessels and their secondary consequences. The fifth group of pathological changes comprise the *parenchymatous degenerations*. Here we are undoubtedly dealing with the effects of the specific toxin upon the nervous tissue, for this theory gives us the most rational explanation of the pathology and clinical course of those diseases formerly termed metasyphilitic.

The above named pathological changes are seldom, if ever, found singly, but are generally present in combinations of two or more.

We consider that in syphilis any part of the brain proper, or of the spinal cord, or any of the cranial or peripheral nerves may be involved, we can readily account for the diverse manifestations of syphilitic involvment of nervous tissue. Let us bear in mind that every case of nervous syphilis is not paresis or tabes, but that specific disease involving brain, cord or meninges, or all three, and simply termed cerebro-spinal syphilis is much more frequent. This does not present the classical picture of either tabes or paresis but so diverse and varied, and at times obscure, are the neurological or psychic disturbances here encountered, that a complete neurological examination of every case under our care should be made early and often repeated, and every neurological disorder found in a luetic patient should be suspicioned as being due to syphilis until it has been proven otherwise. At this stage the burden of proof cannot be placed on the neurological symptoms alone and the Wassermann reaction on the blood serum is of little value. Our greatest aid in clearing the diagnosis is an analysis of the cerebro-spinal fluid.

Spinal Fluid Tests of Value.

Spinal puncture, for the purpose of withdrawal of the fluid, was first performed in 1891 and in the same year Quincke published his technique for the procedure. However, it was not until Wassermann, Noguchi, Nonne and Lange had published the results of their analytical work that we became acquainted with the different tests that have made spinal fluid analyses of value.

The tests that are of the greatest value are, in the probable order of their diagnostic importance of syphilis of the nervous system, first, the Wassermann reaction on the fluid; second, the cell count; third, the test for an increase in the amount of globulin, and, fourth, the colloidal gold test of Lange. The first three of these, plus the blood Wassermann, were by Nonne termed the "four reactions."

The Wassermann reaction on the fluid, when positive, may be considered proof of the existance of nervous syphilis, but this test gives us no information as to the degree of activity of the syphilitic process. The fluid Wassermann bears little relation to the Wassermann reaction on the blood serum and may be strongly positive when the latter is negative or doubtful. On the other hand, a positive blood serum Wassermann is invariably accompanied by a negative reaction on the fluid if there is no syphilitic involvment of the brain or cord unless the latter is strictly limited to blood vessel changes. This discrepancy in the fluid and blood serum reactions is due to the neural origin of the antibodies in the fluid in nervous syphilis. (4)

The cell count of normal fluid varies within certain limits. The fluid may be entirely free from cells or a few small lymphocytes may be present, and any number between zero and seven per c. mm. may be considered normal. From seven to ten may be considered borderline but any number above ten per c. mm. should be regarded as being pathological. The presence of an increased number of cells is indicative of some active lesion.

The determination of the presence or absence of an increase of globulin can be accomplished best by either the Nonne-Apelt or the Noguchi method, preferably by both. When an increased globulin content is found the test is confirmatory of the positive findings in the two reactions cited above.

The colloidal gold test of Lange is the most difficult to perform and gives us the least information of any of the four. This test, when positive, yields a typical reaction that was formerly thought to be pathognomonic of paresis, and here it is the most constant, but more recently it has been shown to be positive in other conditions as well.

When used in conjunction with the other three, this test is of value.

These four tests have been demonstrated to be of such importance that anyone who can properly perform and interpret them can often clearly diagnose cases that are clinically doubtful. Positive reaction secured in all these tests, or even in the first three, is pathognomonic of active nervous syphilis. On the other hand negative findings cannot be taken as absolute proof that this does not exist, but unless persistently pronounced clinical signs point to the contrary, repeated negative findings may be taken as conclusive evidence. The percentage of positive findings in each of the first three of these tests on the spinal fluid of neuro-syphilitics is as follows: positive fluid Wassermann reactions range from sixty-six per cent in cerebro-spinal syphilis to ninety-three per cent in paresis; pleocytosis from eighty per cent in cerebro-spinal syphilis to ninety-seven per cent in paresis; and a globulin increase from eighty per cent in cerebro-spinal syphilis to ninety-nine per cent in paresis. (5)

At the Dix Hill State Hospital we make these four tests on the spinal fluid of all cases that fall into one or more of the following groups:

(1) Cases presenting a history of syphilis.

(2) Cases showing clinical signs of systematic syphilis.

(3) Cases showing a positive or doubtful Wassermann reaction on the blood serum.

(4) Cases showing any neurological or psychic evidences of syphilis, regardless of the result of the Wassermann reaction on the blood serum.

Two cases that will tend to show the value of this procedure will be here reported:

Case 1. C. L., male, age 44, merchant, adjudged insane because of excitement, expansiveness, and pronounced delusions of grandeur. On admission he gave a history of a syphilitic infection followed by a pronounced skin eruption as occurring two years before admission. Wassermann reaction on the blood serum was four plus. After preliminary examination a provisional diagnosis of paresis was made, the opinion of the examiner being based on the clinical evidence and the blood Wassermann report. However, when an analysis of the cerebro-spinal fluid was made all the above cited reactions were found to be negative. This was sufficient evidence to warrant changing the diagnosis to acute mania. Within a few months the patient's excitement ceased, his grandiose delusions vanished, and he became mentally normal. After he had ceased to be so much excited antisyphilitic therapy for his systemic infection was instituted.

Case 2. C. A., male, age 38, farmer. Came to the State Hospital from a private sanatorium where he had been taking treatment for chronic alcoholism. Gave a history of having been drinking heavily for the past year. No history of syphilis. Wassermann reaction on the blood serum was negative. His case was regarded with suspicion because of a slight inequality of the pupils and the fact that he was somewhat expansive. An analysis of the spinal fluid gave a four plus Wassermann reaction, a cell count of forty-two lymphocytes per c. mm., an increased globulin content, and a paretic gold curve. On the spinal fluid findings alone the case was diagnosed incipient paresis

Many other cases could be cited from our records but these two serve to illustrate the point that cases that are clinically doubtful can often be accurately diagnosed when we take the time and trouble to investigate the spinal fluid.

Simplicity of the Procedure.

Spinal puncture is not a difficult procedure and with a fair amount of practice any physician can acquire the technique. True there are certain cases in which a puncture should be undertaken with caution, as for example; advanced cardiac affections, marked arteriosclerosis, brain tumors, or any markedly weakened physical condition. An experience gained through the performance of more than fifteen hundred spinal punctures has led the writer to doubt the existence of any absolute contra-indications. Certainly the dangers are reduced to a minimum if the puncture is made with the patient lying on his side, if the skin is anesthetized with ethyl chloride or other local anesthetic, if but a very small amount of the fluid is withdrawn, and if this is immediately replaced by sterile normal saline solution. After the fluid has been with-

drawn, all requisite tests, with the exception of the Wassermann reaction, can be made by anyone competent to do ordinary laboratory work such as urin analyses and blood counting.

Reaumont in his book, "Syphilis and Tabes Dorsalis," states that among 3,400 syphilitic patients he found 290 with syphilis of the nervous system. On separate series of cases Engelstedt and Gerhardt found about the same proportion. Then if we accept their statements as authoritative, we may conclude that some form of syphilis of the nervous system develops in about eight per cent of all syphilitics. In other words, the practitioner, when he has treated 1,000 cases of syphilis, has had under his observation eighty cases of nervous syphilis, regardless of whether he has or has not recognized them. No one can say when the patient with systemic syphilis is going to have some involvement of the nervous tissues and no one can safely say that the syphilitic is free from such involvement so long as an opinion is based on the clinical signs and the blood Wassermann. Every luetic should be regarded as a potential case of nervous syphilis and we as practitioners of medicine owe it to our syphilitic patients to keep constantly on the alert for the development of this affection, and before any syphilitic is discharged as being cured, to use every means at our disposal to satisfy ourselves that he has no involvement of the nervous system.

Summary.

(1) Certain pathological conditions of the brain and cord produce changes in the composition of the cerebro-spinal fluid. These changes are especially pronounced and fairly constant in nervous syphilis, although the pathological lesions and clinical manifestations of this disorder vary greatly.

(2) In diagnosing syphilis of the nervous system the spinal fluid tests that are of the greatest value are: the Wassermann reaction, the cell count, the test for globulin increase, and the colloidal gold test of Lange. These are comparatively simple and are easily made. By their use and proper interpretation obscure cases often may be accurately diagnosed.

(3) In the diagnosis of syphilis of the nervous system the Wassermann reaction on the blood serum alone is of little value. This should always be supplemented with a complete analysis of the spinal fluid.

(4) Eight per cent of all cases of syphilis develop some form of nervous syphilis. All syphilitics should be given repeated examinations and any neurological or psychic disorder that may develop should be suspicioned as being due to syphilis until it has been proven otherwise.

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HEART—DIAGNOSIS.

By Thompson Frazer, M. D., Asheville, N. C.

Our conception of many diseases has undergone considerable change during the past few years; in no class of disease, perhaps, have our ideas suffered greater changes than in affections of the heart. Twenty-five years ago it was the valves upon which our attention was chiefly centered and our every endeavor was directed toward discovering a leak or an obstruction which showed itself by a characteristic murmur; this accomplished, we attempted a diagnosis, the question of prognosis being accorded but scanty attention, while the subject of myocarditis was scarcely dealt with at all.

Today, diagnosis (though naturally as essential as it ever was) is not looked upon as of much value unless it carries with it some element of prognosis; for what we are concerned with is what the

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heart can do, and how long, in all probability, it may be expected to do it. We are not so much interested in the fact that this or that valve is stenosed or leaky as we are of the efficiency—under these conditions—of the muscle that pumps the blood throughout the body; for it is well recognized that a murmur is often insignificant prognostically, also that a damaged heart may present few or no physical signs and may be readily overlooked unless a careful history be taken and the heart's functional efficiency be tested by appropriate exercises. Thus, the emphasis has been shifted from the endo- to the myo-cardium, while diagnosis has been forced to include—to some degree, at least—prognosis.

In arriving at a diagnosis of heart disease there are three modes of approach all of which will give us valuable information. These are: (1) The history, (2) the physical examination of the heart, (3) testing the cardiac efficiency.

In this brief paper I can but touch upon the subject of history. By history I mean not only the history of rheumatism, syphilis and other infections, and of arterio-renal conditions that are so commonly associated with heart disease, but the history of the patient's restriction in his power of response as indicated by the presence of subjunctive symptoms. According to Mackenzie the individual always has symptoms before he has signs and these symptoms are never absent when the heart's efficiency is in any way affected; the common symptoms are breathlessness, fatigue and pain. The importance of obtaining a careful history, therefore, cannot be overemphasized.

Let us now turn to the physical examination of the heart, always bearing in mind that the function of the heart depends upon myocardial integrity and that valvular disease is serious in the degree that it indicates myocardial disease. The abnormalities which, according to Lewis constitute the chief reliable signs of heart disease are readily elicited, several of them, by the simple procedure of inspection and palpation. They are as follows:

1. Distinct overdistension of the veins of the neck.
2. Definite signs of an enlargement of the heart.
3. The presence of an unmistakable thrill.
4. An irregular heart action which is maintained on exercise (the heart rate being high).
5. An aortic diastolic murmur.
6. A diastolic rumble at the apex.
7. Widespread arterial disease or a persistent high blood pressure.

(1) "Overdistension of the veins of the neck," says Lewis, "is one of the most important physical signs which we possess of heart disease; it should not be, but often is neglected. . . . Engorgement of the right heart is never present when the veins show no increase of pressure."

(2) Palpation gives us valuable information: placing the whole hand over the precordium we not only note the approximate rate of the heart beat, its regular action and the presence of excessive throbs or thrills, but we are able usually, to locate the maximal impulse which ordinarily lies between 3 and 4½ inches from the midline. This impulse is usually distinctly palpable as a more or less definite thrust and this is the best guide we have to the left border of the heart and (if the heart is not displaced) to the size of the heart. By the simple procedure of locating the maximal thrust we acquire some very important information.

(3) Palpation may also discover at the base of the heart, a systolic thrill suggestive of aneurism or the diastolic thrill of aortic insufficiency; it is the thrill at the apex, however, that is of the greatest interest as not uncommonly mitral stenosis may be strongly suspected from the presence of this sign. Valuable as this sign is it is not wise to rely on it in the absence of other signs as it is not uncommon to find thrills in thin-chested individuals, especially when the heart action is vigorous.

(4) The irregular heart action due to auricular fibrillation is distinguished from irregularities of less significance by being maintained on exercise. This is a serious arrythmia, usually, indicating as it does myocarditis in most instances.

(5) The aortic diastolic murmur is usually soft and low and heard best in early cases to the left of the sternum; the vascular phenomena of aortic re-

gurgitation—capillary pulse and characteristic blood pressure—should also be looked for.

(6) The diastolic murmur of mitral stenosis is not always easy to detect; owing to its inconstancy, efforts should be made to elicit it where there is a loud, snappy first sound at the apex, or an accentuated pulmonary second. It is sometimes heard best when standing, quite frequently only when recumbent, it may be brought out by exercise and having the patient lie on the left side.

(7) Widespread arterial disease or high blood pressure means a diseased myocardium—the blood pressure, however, must be persistently high to have this significance.

It is apparent that the signs just discussed—venous distension, enlargement, thrill, diastolic murmurs, irregular heart action, arterial disease and high blood-pressure—are important in that they are found in conditions associated with a damaged myocardium; thus even in the earlier stages of mitral stenosis or aortic regurgitation the myocardium cannot be regarded as sound; in all cases of aneurism or chronic renal disease the myocardium is damaged; and when the heart is definitely enlarged a myocardial defect may be assumed.

I can refer but briefly to one method of examination that is not utilized as often as it should be, namely, X-ray examination. This is of value in aiding us to detect aneurisms and dilatations of the aorta which are apt to be overlooked in the physical examination. Moreover, corroborative evidence of enlargement of the heart may often be furnished by the fluoroscope. More important, perhaps, is the information afforded us in those cases where the clinical diagnosis is not supported by X-ray evidence; where, for instance, a heart that is assumed to be enlarged is found, on fluoroscopic examination to be of normal size.

Having taken the history and examined the heart, with the body at rest, the next step is the estimation of myocardial function as shown by the heart's power of "response to effort"; for it is evident that an examination made with the body at rest affords little opportunity for estimating the reserve force of the heart. Various tests have been devised for estimating cardiac function; one of the most simple ones, which was adopted as the routine test in the army, consists in having the patient hop 100 times on one foot, noting how long a rapid pulse and dyspnoea persisted; neither should be present after two minutes. It is true that there is no definite amount of work which we can set up as a standard; it is evident, for instance, that a trained athlete could take a greater amount of exercise than one who is not in training so that considerable latitude must be allowed in the interpretation of such tests. I believe, however, that the exercise tests are of great value in estimating the functional capacity of the heart; in addition to discovering a limitation of the power of response they are also of value in bringing to light a sign that was perhaps non-existent before exercise. No examination of the heart is complete unless an attempt has been made to elicit the heart's response to exercise.

I cannot conclude without saying a few words on the subject of prognosis, for, interesting as it may be for the physician to arrive at a correct diagnosis, this diagnosis, from the patient's point of view is incomplete; he does not so much care what the affection of the heart may be as he does how it will affect the duration of life and his working capacity. Difficult as it is, and at times impossible to make a satisfactory prognosis there are certain principles that will help us in arriving at a conclusion.

In all cases, the condition of the myocardium as shown by the manner in which the heart carries on the circulation, is the keynote to prognosis. It is obvious that the patient whose rest force is encroached upon, that is, who has symptoms of heart failure—breathlessness, cyanosis, venous distension, oedema—which persist despite rest, has but a little time to live. Before giving a prognosis in the case of a patient who shows limitation of reserve force only, that is, who has symptoms only on exercise, the prognosis must be deferred until rest has been enforced. Many cases may recover more or less completely from their first attack of heart failure if rested, while their ability to remain free of symptoms thereafter depends to a great extent on their occupation and financial condition and as to whether a life can be led that does not

tax the heart beyond its limited power of response. Thus, a heart with lessened reserve force may be amply able to maintain an efficient circulation and permit the subject to live a useful life, although a life on a lower plane of activity.

In mitral stenosis, which is usually a steadily progressive lesion, there is, however, great variation in its rate of progress and the prognosis depends to a large extent on the rate of progress. Thus if we find that a middle-aged person with good response to exercise has a history of rheumatism dating back to childhood, we are probably dealing with a case which is stationary or only slowly progressive, and the outlook for life and usefulness may be said to be fair.

In aortic insufficiency the chief signs that indicate a considerable involvement of the myocardium are a greatly enlarged heart and a pulse of extremely collapsing character; attacks of angina pectoris and a limitation of response to effort are also unfavorable symptoms. The etiology is also of considerable importance; it has been found that cases attributable to rheumatism are less rapidly progressive than when syphilis is the cause; in the syphilitic cases the condition is one which progresses with great rapidity and the blocking of the coronaries may seriously interfere with the blood supply to the heart.

In concluding this paper I am conscious of its shortcomings; I hope, however, that I have emphasized sufficiently the importance, in heart cases, not to diagnose merely a valvular lesion but to estimate so far as it is possible with the means at our command, the functional integrity of the heart muscle as well.

THE IMPORTANCE OF EARLY DIAGNOSIS OF UTERINE CANCER.

J. F. Highsmith, M. D., F. A. C. S.

I feel keenly how incompetent I am and the responsibility imposed upon me when I try to briefly express my ideas as to the Early Diagnosis of Uterine Cancer—a subject so important.

The title of my paper, namely: The Importance of Early Diagnosis of Uterine Cancer, in the words of Dr. J. F. Percy, who has given so much thought and study on this subject, epitomizes the whole of the cancer subject. As the saying goes in all business propositions, "this is the whole thing in a nut shell," namely: the early diagnosis of this dreadful disease, *cancer*.

Now the question is, how can this be accomplished? From our viewpoint we must see these cases early, as this is the real nub to the successful treatment. We all know, to our great sorrow, that we see them early only in exceptional cases. Did you ever stop to think that the treatment of cancer is a different proposition from most other diseases which physicians are called upon to treat, in that, untreated they *all die*, treated, especially if diagnosed early, modern methods employed and the disease located where it can be reached, we do not go far amiss in claiming that practically all of these cases recover. But sad to say it has been our experience in the psat as well as the experience of our colleagues that when we see a case of cancer, the disease has reached that stage where the problem of diagnosis need no longer disturb us. They have reached that stage where the question is no longer one of diagnosis, as I have before stated, but one of treatment, namely do the best you can, and this based on many factors, most often palliative, removing as many rough places in the road to the grave as possible. How many of us have prescribed opium in some form to alleviate pain and make life bearable to some devoted mother, carrying a burden of sadness in our hearts.

In the light of present knowledge on the subject, knowing the conditions which develop into cancer, stimulated by daily irritation which conditions can be successfully treated and cured with no subsequent malignant complication if handled in time, the honest, thoughtful, painstaking diagnostitian must realize the burden imposed upon him and sound the alarm of danger with so much force that "she who runs may read" the message: Cancer can be prevented if the initial focus is properly treated; cancer may be cured if taken in time. Oh! may each one under the sound of my voice hear the call to arms

*Read at the Pinehurst meeting of the N. C. Medical Society, April, 1921.

against this most dreadful of all diseases.

Many of us are, and, have been sleeping at the switch however, not intentionally so, while the lightning express loaded down with ignorant human lives, predisposed to cancer, have unnecessarily gone to premature graves.

Generally speaking it is estimated that the cancer mortality in different types for the United Stated annually will closely approach 100,000. For uterine cancer alone about 1,400 annually. The people at large must learn to recognize the danger signal and seek advice and treatment in the early stage when cancer is the most curable. No matter how great his skill or adequate his training, the doctor cannot help a patient who does not come to him. Study of considerable number of cases reported by many different doctors, would indicate that on an average people affected with this disease, wait almost exactly twelve months after noticing first symptoms before they consult a doctor about it. The tendency is to postpone the evil day. "Watchful waiting" has its place and should be exercised in many critical moments at the bedside of the sick, but it must be absolutely ruled out when we come to the question of cancer,—if there be the slightest possibility of malignancy the suspected focus must be promptly removed.

The beginning of cancer is usually painless; for this reason its onset is doubly insidious and treacherous, therefore, danger signals must be looked for and heeded in time.

Patients with uterine cancer can be divided into three groups:

First—Those who come at the very beginning of the trouble, the exception.

Second—Those who delay three or four months before attending to this matter, occasional.

Third—Those who put off treatment until they experience pain or have a bad discharge for a year or more, frequent.

Perhaps the most irrefutable argument that cancer is due to the irritation of trauma is the fact that out of every one hundred cases of cancer of the uterus, ninety-seven of them occur in women who have borne children. In other words, the uterus that has not been traumatized is practically free from the dangers of cancer. I am sure that one of the saddest things that I have ever seen is for a mother of several children with an inoperable cancer of the uterus to come seeking relief, and all because of somebody's ignorance or neglect. A standing order for every child bearing woman should after each labor have all lacerations repaired. If at any time, especially for those who are thirty years of age, there is the least irregularity of menstruation, go at once to a competent surgeon. A stitch in time here will save countless lives.

One of the earliest symptoms of cancer is uterine hemorrhage. Wherever there is uterine hemorrhage that cannot be accounted for, the uterus should be most carefully examined to see if there be any signs of malignancy, as it is only in the early stages of the growth that cure may be hoped for. Hemorrhage at the menopause may be and often has been misleading. The true menopause may signify widely different ideas, not only to the doctor and patient but suffice it to say that every medical man realizes that the period during which the menopause is in progress of establishment is a trying one. It comes at a time when every woman is inclined to the development of malignant growths and degenerations, with many and varied forms of nervous disorders, for this reason many women at this age look upon uterine bleeding of a more or less normal occurence, and sad to admit yet it is true, some physicians pass it off by saying that it is natural and advise such patients that when they have passed their menopause it will cease.

It is at this stage of life that most depends upon early detection of malignant growths of the uterus and the immediate and thorough removal of diseased tissues. Therefore, I present this paper to sound a note of precaution to everyone to be on their guard and to never regard uterine hemorrhage from the age of thirty to sixty years of life as a trivial affair, but should always put forth every effort to properly and immediately diagnose the cause of the bleeding and insist upon it that the patient receive the proper treatment at once. Delay is dangerous. Hemorrhage at this time of life in practically every case means uterine carcinoma, unless

other causes can be established. If cancer gave extreme pain from the start we would make an effort to get rid of it on short order.

Carcinoma of the cervix can easily be diagnosed by inspection and palpation. Uterine polypi can also be easily detected, but when all such local causes of hemorrhage are excluded, in the absence of constitutional cause, uterine carcinoma is almost certain. The slightest irregularity of menstruation should be looked upon with great suspicion. If the menstrual functions should cease in any way abnormal, then a most thorough and painstaking history and examination should be made in every case. All such cases should be made to thoroughly understand their condition and the probability of their developing malignant disease. If your first examination gives a negative result, do not give your patient too much encouragement but explain to her the importance of repeated examinations at short intervals until she has well passed the menopause and all abnormalities of the menstrual functions have long subsided.

Hemorrhage occurring in an individual giving such a history is very significant of carcinoma. If there is the slightest doubt a curretment of the uterus should be performed and the curettings subjected to a thorough microscopical examination by an expert pathologist, when carcinoma of the uterus can easily be detected where otherwise it was impossible. If the cervix be especially hard at any point or shows little prickle-like points that bleed easily then a wedge about a quarter of an inch broad and half inch in depth should be removed, put in alcohol or formaline and sent at once to the pathologist. The mucus membrane in health as seen under the microscope is just as different from that of cancer as are two patterns of wall paper.

For the sake of the people at large and suffering humanity God speed the day when different societies will still further their work in their educational campaign in fighting cancer with facts. First—Carrying a message of *hope* to the public; What cancer does; What it is; How it begins, and how the disease may be prevented and cured.

Many of the leading organizations in this country have long since organized themselves in this movement, having appointed committees to act, placing their best efforts in the educational campaign to bring this most vital question before the people in a practical way. Leaders in this have been the American Medical Association, the American Gynecological Society, the American Surgical Association, the Clinical Congress of Surgeons of North America and last the American Society for the Control of Cancer. Under the latter state organizations have been organized; the State of North Carolina has its committee with Dr. J. W. Long of Greensboro, chairman. We should give this movement every assistance within our power.

It was by educating the people at large through the medical profession that a patient suffering from appendicitis has learned to seek treatment within the first twenty-four hours, and the cancer patient must learn to seek treatment as promptly as the appendicitis patient.

In conclusion, first the ravages of this disease can be diminished by the dissemination of knowledge leading to its early diagnosis by the patient and physician and prompt treatment. Cancer is curable in the majority of cases if treated early. These facts have been established by the work of the research laboratories. Cancer in the beginning may cause no pain or other symptoms of ill health.

No conscientious doctor will treat a case that might mean cancer without thorough examination.

REPORT OF A NEW MERCURY COMPOUND FOR INTRAVENOUS USE.

By Harry K. Robinson, M. D., Associate in Dermatology and Syphilology, University of Maryland, Baltimore, Md.

When one considers the many years, four hundred or more, that mercury has been in use in the treatment of syphilis, the surprise is not that there are so many mercurial compounds, organic and inorganic, but that there are so few available ones that are easy and comparatively innocuous of administration and yet fully effective therapeutically.

Too little attention has been paid to the patient's comfort. The thoroughly honest physician has prescribed a definite treatment and nothing as an alternative, while the rogue has given almost

anything and nothing. Of late we are taking more and more into consideration the fact that the patient, as well as the disease which afflicts him, must be considered. It is surely better to *start* a patient on Arsphenamine, say 0.2, intravenously, and have no accompanying unpleasant reaction, than to give the patient, say 0.6, make him ill and instill in him an abhorrence for a treatment that he will be strongly inclined to discontinue, when for his own and for the community's sake he needs to continue. It is high time that we "coddle" the patient, impressing him with our anxiety to cure him, and with the frequent dire end results of untreated and often haphazardly treated syphilis, regardless of what motives he thinks we may have. As far as possible we must cure the patient and protect the community, and to cure we must see that he comes back for needed treatment, *mixed* treatment.

While there may be still some physicians who advocate *either* 606 or mercury alone, they are surely in the minority. Even in the so-called primary or early cases, J. A. Fordyce (1) advises both Salvarsan and mercury, although, as he says, there are undoubtedly cures in these very early stages using only Arsphenamine. Whatever the methods of administering the mixed treatment, whether both be given at the same time or in series, certainly, from our present knowledge, mixed treatment of Arsphenamine and mercury should be given.

It now remains for us to find a suitable, easily administered, mercurial compound that will be of great efficacy with the least discomfort to the patient. Few of us use mercury by mouth. First, because the patient objects to a long period of continuous taking which becomes intolerable; and, second, we are never sure how much of the intaken mercury is absorbed and how much cast off by the gastro-intestinal tract. There is no doubt that mercury by mouth is instrumental in removing lesions, but where a cure is desired the consensus of opinion is against this method. As to mercury by inunctions, there is no doubt now that definite absorption takes place when it is rubbed into the skin, whether the product used be mercurial ointment or calomel ointment, the latter being the preference of Schamberg, (2) There may be some controversy as to the method of absorption, whether by skin (Schamberg), or by skin and inhalation (Wiles and Elliott), (3), but in either case it is difficult to judge quantitatively the amount of absorption, and in the treatment of all diseases we should eventually come to the methods that give us exact quantities. Therefore, injections, intramuscular or intravenous, are urged.

Against intramuscular injections are two objections. First, the compounds known and used are painful while being absorbed; and, second, are too slow of absorption (Cole and Littman). (4) There is then left the intravenous method, and, as in careful hands, it is an almost painless method of procedure, we are always willing to try any intravenous mercury that will prove effective and yet not injure the veins. This report is a clinical record of the results obtained by the intravenous use of Disodium Mercuri-salicyl-acetate (Mercurosal), dealing with the effect on the objective lesions of syphilis.

Briefly, Mercurosal is a white powder, easily soluble in distilled water, in which medium it is injected. Four hundred and fifty injections were given to thirty-two patients. In all the cases the injections were given every other day. Three developed mercurialism (salivation); one, after two injections, but this patient had had severe reactions from mercury by mouth and from injections of small amounts of Arsphenamine. Another had had a small amount of pyorrhoea previous to injections, but injections subsequent to having the pyorrhoea attended to had no ill effects. In one patient the median basilic vein became inflamed and hard four inches in its course the second day after injection. One patient developed diarrhea after one injection. In all cases the lesions disappeared before the tenth dose, but in none of the cases was the positive Wasserman reduced to negative after ten doses.

Typical cases follow:

Case No. 1—E. W.; entered October 25th, 1920; age, 17; white; female; married. Family history negative.

Was referred to the clinic because of an eruption on the body which proved to be luetic. She denied any venereal sore and had no knowledge of a luetic

condition in her husband. Principally on the face, and less markedly over the body, there was an eruption of discrete, pin-head size, reddish papules, slightly scaly. On the body the papules were grouped (corymbus type). Miliary papular syphiloderm.

Patient received three injections of Mercurosal and within a week following the last injection the eruption had disappeared. As she was pregnant the patient was then started on Arsphenamine.

Case No. 2—E. J.; entered October 26th, 1920; age, 23; colored; single; female. Family history negative.

Patient entered the clinic with a sore on vulva. This sore had been present about six weeks. Three weeks after the appearance of the lesion an eruption broke out all over her body, very profuse, particularly on the face. The lesions were pea-sized, dell-defined, somewhat infiltrated, maculo-papular in form, dark red in color, and slightly scaly. On the vulva, on both labia majora, were four or five well defined, large pea-sized, moist, flat lesions. (Condylomata lata).

Patient received ten doses of Mercurosal. The lesions started to fade after the second dose, and infiltration had disappeared after the fourth, only pigment remained.

Case No. 3—L. M.; entered September 30th, 1920; age, 32; white; female; married. Family history negative.

About thirteen years ago, shortly after marriage, patient developed on both vulva what she termed "soft chancres." These persisted three months under local treatment with a salve. She gave a history of one abortion, and one child born, which lived only two weeks. Two years ago the patient had frequent sore throat. She came to the clinic with an eruption which had been present six months, on the anterior surface of the right arm just above the bend of the elbow. The lesion was about two and one-half inches in diameter, well defined, irregularly outlined, serpiginous, raised, infiltrated, nodular in type, dark red in color, and covered with a crust. Removal of this crust revealed exudating ulcers. There was no other eruption on any part of the body. (Serpiginous form, nodule ulcerative syphiloderm.)

Patient was given ten doses of Mercurosal. When she returned for the ninth dose lesions had entirely healed, leaving only a brownish scar.

Case No. 4—H. R.; entered October 20th, 1920; age, 36; white; female; married. Family history negative.

Some eight months previous to entering the clinic patient developed, in the mid line over the sterum, a lump, which in two months broke down and became a discharging ulcer. It appeared to be a sinus, but probe would not enter more than an eighth of an inch. The lesion was about the size of a quarter, irregularly round, edges a dark red, and infiltrated. There was a constant exudation of moderate amount. Patient denied any venereal sore. Wassermann was positive. Guma.

Patient received three doses of Mercurosal. One week following the last injection the lesion was healed. She refused further treatment.

Case No. 5.—R. S.; entered October 28th, 1920; age 32; white; single; male. Family history negative.

In 1919 patient developed a sore on the penis, which persisted several weeks under local treatment. Some weeks later an eruption appeared over the face and body, for which he was treated at various places. He came to the clinic with numerous pustules, pea sized, discrete, dark red in color. Several of these were excoriated and covered by blood crusts. Over the left eye was a nodular lesion about the size of a dime. Early pustular syphiloderm.

After two doses of Mercurosal the lesions were markedly improved but as he was a non-ambulatory patient he was transferred to another hospital for internment, and we could not note his progress.

Case No. 6.—A. W.; entered October 20th, 1920; age 44; colored; married; female. Family history negative.

Two years prior to coming to the clinic a small ulcer appeared on the anterior surface at middle third of right leg. It had persisted during the two years at about the same size and shape. (Gumma.)

Patient received nine injections of Mercurosal. Within a week following the last injection, the lesion had entirely healed.

Case No. 7—D. T.; entered October 14th, 1920; age 18; colored; female; single. Family history negative.

Patient came to the clinic with an eruption of ten weeks' duration, all over face and body; numerous, discrete, peasized, flat papules, well defined and dark red. Several of the lesions were excoriated. Large, flat, papular syphiloderm.

Ten injections of Mercurosal were given; at the fourth injection the eruption had faded considerably, at the fifth there was no infiltration, and at the sixth only pigment spots remained.

In addition to the intravenous injections, an effort was made to ascertain whether this drug could be given by intramuscular injection with less pain than insoluble mercurial compounds, and with as great efficacy. Only three patients were used for this purpose; all were babies, congenitally infected, and all negroes.

Case No. 1—Entered March 23rd, 1921; age, 2 months; female. Father being treated for syphilis; mother's Wassermann positive. Birth normal; weight at birth, 7 lbs.

One month after birth there appeared two small crusted, annular, papular lesions on the forehead. All the finger's were swollen at the second joint, particularly the index finger of the left hand. These swellings were apparently not painful. Coryza has been present since birth.

Patient was given three intramuscular injections in the buttocks, four days apart. After second injection the ulcers on the forehead had entirely disappeared. Coryza also had practically disappeared. On return of the patient for the fourth treatment, it was noticed that the swellings of the fingers was reducing slightly, but as the lumps on the buttocks, resulting from intramuscular injections, were still present and painful further intramuscular injections were discontinued. The baby was "slobbering" very much.

Case No. 2.—Entered March 21st, 1921; age 2 months; female. Mother has positive Wassermann but without apparent symptoms or signs of syphilis. No Wasserman was obtained on father.

Ten days after patient was born coryza was noticed. Three weeks later four annular papular lesions appeared, arranged in almost a straight line across the eyebrows. All lesions were about half an inch in diameter, round, well defined, edges infiltrated, with a small, thin crust in the center.

Patient was given four injections of Mercurosal every fourth day in the buttocks. After the second injection only the pigment remained of the previous lesions, all infiltration having disappeared. On return for the fifth injection, it was noticed there were swellings at the site of all four injections, one larger than the rest and slightly soft. Coryza had disappeared.

Case No. 3—Entered February 15th, 1921; age 16 months; female.

Coryza had been present since birth and blood Wassermann was positive. No other luetic lesions.

One injection of Mercurosal was given. Patient returned ten days later with marked improvement in coryza, but a painful lump at site of the intramuscular injection in the buttock.

Conclusions:

1. That this drug removes lesions very rapidly by intravenous injection.
2. That the dose given should be greater than 0.1 gram, as in none of the cases was the Wassermann effected.
3. That this drug does not irritate the veins, however small the veins may be.
4. That in children, at least, intramuscular injections are not advisable, as in three cases used lumps from the injections were present eight weeks later.

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Chiropracters Jailed—Refusing to stop the practice of Chiropractic without a license the following are reported to have been given jail sentence:

Alice Huhn, Anaheim, Cal., May 27, sixty days.

F. B. Whidden, publisher of California Chiropractor, June 17, 1921, sixty days.

H. A. Kitelle, Los Angeles, Cal., May 26, ninety days.

SOUTHERN MEDICINE AND SURGERY

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"Read not to contradict and confute, nor to believe and take for granted, nor to find talk and discourse, but to weigh and consider."—Francis Bacon.

SUB NURSES?

"*Yesterday, this day's madness did prepare.*"

The events of today are invariably the culmination of the events of yesterday and the present situation regarding the nursing of the world's sick is the natural result of the general trend of the times.

A tremendous deal has recently been written and said about the world going to the bow-wows for "lack of woman's nursing" and certainly in a general sense there is becoming "a dearth of woman's tears."

If one should listen to some of the sensational jargon of the times it might be easy to imagine that the time is coming when there will be neither "woman's nursing" nor "woman's tears" because "woman" has been supplanted by a female man.

With woman robbed of her femininity and man robbed of his masculinity what is there left but to become an hermaphroditic people without chivalry, purity, love, devotion, (filial or conjugal) or indeed any other of the divine virtues with which God originaly endowed the man and the woman. Can any picture be more pitiable than that which today shows a product of the times—a *social hermaphrodite.*

But back to the nursing problem.

An article in the October Pictorial Review, entitled "Wanted—100,000 girls for Sub-Nurses" is an interview with Dr. Chas. H. Mayo and is an added discussion of a question which concerns the Nursing Profession, the Medical Profession and the world's sick.

The present situation, about which there has been so much recent discussion—and much of it purely sensational—*is* a product of the times. The natural and to be expected sequence of yesterday's events. After all, nurses are only human and desire the things their sisters have. And who would want them otherwise?

The time was when the care of the sick was in the hands of the priesthood. In the process of evolution there came a division of effort and man's physical ills were cared for by physicians, and medicine developed from a "black art" to a scientific profession.

The time was when the people lived—or died—without the ministrations of the professionally trained nurse. In contra-distinction to man's inherently agressive, masculine and antagonistic nature, the real feminine woman is companionable, comforting, gentle and tactful in her ways of doing things. She has always been the ministering angel in the hours of pain and torture. "It is her nature to." The Spirit of God in the heart of every true woman makes it as inevitable that she should want to serve—be a mother—as that the sun should shine.

The spirit of Florence Nightingale was only the natural manifestation of this true feminine instinct—an instinct of motherhood for mankind, and an instinct to perform her complemental part with man in the fulfillment of life's plans. Nursing was her mission, chosen in lieu of wifehood and motherhood, and with no more thought of the finance than has the girl who marries the man she really loves.

In either case, however, the "workman is worthy of his hire" and she is entitled to all the recompense, in pleasure and happiness, which her devotion and service commands.

Just as the efforts of the medicine man were made more effective by serious training and education so the woman-mother nurse instinct is made more effective by serious training and education. But while this instinct can be cultivated, developed and made more effective, no amount of training can *create* it, the spark of life must first be there, and in this sense nurses are born and not made.

The present world's economic upheaval, with the extremists clammoring for sexless jobs and for the obliteration in the world's work of all of God's marks of sex differentiation, the pole star of woman's sphere has become clouded, and this feverish excitement and unrest has had its influence in the heart of the truly born nurse.

Along with her sisters—and brothers—the environment of the times encourages her to think of nursing in terms of dollars and cents. To figure how much she can get rather than how much she can give. Exactly the same reason is making the parents ask, when thinking of a daughter's attentive suitor "How much money can be made."

The world is thinking of life in terms of dollars and cents and the nurse, yes even the aspirant to wifehood and motherhood, is encouraged to think likewise.

In keeping with the tendency, even though contrary to her inherent instinct, the real nurse and the pseudo-nurse together are forgetting the fundamentals they profess and subjecting themselves to criticism by doing those things which make the people—some people—accuse them of heartless and mercenary motives.

It takes the exception to make the rule but the rule is, that a doctor's income is in direct ratio to his ability to get results. In this present day most people have a very definite idea just what they want and what they are willing to pay for. Ordinarily they call the doctor, and the nurse, which pleases them best and renders the best service. There are doctors who have passed their technical examinations, but who are not practical, or are lazy—at least they are poor doctors. There are doctors who when called to a case give that case the very best that is in them and ever strive to do more. This energy, coupled with tact makes for popularity and increased recompense.

There are nurses who, whether they work 8 hours or 24, give the case in hand the best service they possibly can, and ever serve to do more, while others would render their patient a service by getting out of the way.

Should the aspiring and deserving nurse be compelled to accept only such recompense and recognition as the worthless is worth. Or, must the people be compelled to pay the worthless for unrendered service.

Threatened nurses' unions could not possibly benefit any but the inferior by compelling unmerited recognition.

With nurses, just as with doctors, the law of supply and demand will guarantee the incentive for the individual to strive for greater perfection. A sick world wants the best medical and nursing attention it can get.

The world may need more nurses but it wants the best it can get. The world may need more doctors but who is willing to advocate, under the guise of supplying this possible need, the creation of a sub-standard,—*sub-doctor*. The idea of *sub-nurses*, has little more to command it than would have the appellation of *sub-doctor*. The criticism for any minimum standard should be Public Safety and if a nurse has had so thoroughly instilled into her nature the things she must not presume to do and sufficient of the things she may do to be helpful, then such a person is not a public menace but a public benefactor and after convincing tests, by the institution who grants her diploma and by the state board who grants her registration, which prove this attainment then she should be called a nurse. The time required for her to convince the guardians of the public of her fitness and safety is not a matter that should enter in. *It is not a matter of three years or six years or six months*—once she, like the doctor, has reached the stage of safety then the law should cease and the individual super training—the excess above the safety line—should be a matter for the doctor or the nurse to choose and the eminence to be attained will be striven for because of the increased ability to serve and the increased recognition which such will command. If she has reached the stage of safety when she arrives where Dr. Mayo is willing to call her a Sub-Nurse then she has arrived at the same relative stage in her profession that the medical student reaches when the law grants him the title Doctor. There is no more excuse for a sub-nurse than there is for a sub-doctor.
a sub-nurse than there is for a sub-doctor. The minimum standard should be high enough for safety and low enough to be attainable and the object should be practicability and serviceability.

Neither the nursing profession itself, nor the medical profession nor the public want the minimum standards for nurses lowered one iota, but these standards should not be measured by the time any individual spends, making beds, carrying out bed pans, washing dishes, or the correctness with which she can describe the Circle of Willis, or the chemistry and symbols of Alcohol.

And this brings us up to the meat in the cocoanut—There are multitudes of girls, with the nursing instinct who want to be nurses but who are afraid of the maelstrom of present day hospital nurses—so-called—training schools.

With each of all the thousands of hospitals in the country conducting training schools, private enterprises with 15 beds, as well as those with a thousand beds, there is no uniformity in the instruction given. In fact the instruction given seems in some cases to be a very insignificant consideration just so the candidate works 365 days of each year for three years or makes up every day lost by sickness or otherwise at the end of the time. Any girl who is so dense that she doesn't see that she is being exploited by such a system for the financial gain of the institution certainly hasn't got sense enough to be trusted to care for human lives. The wonder is that so many have had the indominable will to go

through with it because it has been the only way of reaching the goal her heart was set upon.

But habits are hard to break—Customs are hard to change, and when in the course of human events the nurses and pupils, influenced by their surroundings and the spirit of the times, demand more recognition and a standardized training, the hospital owning public and the people who pay the bills are bound to resist. The owner of a private hospital says "But I would be compelled to close my hospital if I couldn't get cheap help in the form of pupil nurses." It has long been a custom and he has gotten in the habit of running it that way. As a class he, and the big public hospitals also have gotten in the habit of thinking primarily in terms of service their pupils can render rather than how much practical and standardized instruction they can give them. The present standard requiring three years service insures to the hospital that length of time whether much or little instruction is given. Most of the classes in the majority of the hospitals are conducted by members of the staff. The hours for classes are at night. The doctor is tired from his days work and his lecture that night will make little difference, for the pupils will stay three years any way, so he doesn't go. The girls are tired for having worked from seven to seven on the halls and don't mind his absence. So the year passes with all too many classes missed. Then since there is no established, standardized course of instruction, each instructor is a law unto himself. Obviously he spends the time emphasizing the things that interest him most. The result is that some classes are prepared for the final examination for a doctor's degree and still know very little practical nursing. Other classes can make a bed beautifully but if they depended on class room instruction would not know enough anatomy to tell the difference between fried chicken and roast beef. But each class has served *three years* and *that* is the standard.

If the law is to say who may nurse and who may not then the law should establish uniform methods and standards for training schools, and the determining factor for granting nurses recognition should be personal capacity—the actual credits earned rather than the years served.

If the primary object of a training school was to impart uniform and practical nursing instruction, then without lowering the standards in the least, the length of service could easily be reduced by one third and still the finished product be much superior in all respects for the nursing of mankind.

THE DONKEY AND THE WOLF.

(*A Spanish Fable.*)

A crippled donkey saw a wolf following him and not being able to flee from his enemy, he said to him:

Friend wolf, scarcely am I able to take another step. In a little while I must give up for the pains in this foot which I have injured will finish me. Therefore, since I am unable to walk, have pity on me, come and pull out, with your teeth, this nail in my foot, in order that I may die without this terrible pain—and then you can eat me.

—Oh! said the wolf, seeing his prey now in hand. I say, that will be very easy for me. Lift up the foot and soon thou shall feel relief.

The new surgeon was approaching his patient, off his guard and with his teeth exposed, when suddenly the donkey let go a terrific kick which left the wolf without a single tooth and almost killed him.

Thus the crippled donkey was enabled to escape while the sorrowful wolf was left crying over his misfortune and saying: Oh—poor me—I deserve this pay for my folly. Why should I have trusted that animal. I—who have always carried the best mouth of all the carnicora and could therefore live as I pleased—Oh why did I assume the role of Reliever. Certainly he who abandons his own proper sphere for another's is lacking in judgment.

Pellagra in the South Not a Menace Nor Due to Under Nourishment.

The Manufacturers Record in its issue of September 8th, 1921, page 67, carries an article under the above title by E. M. Perdue, D. D. Ph., Kansas City, which argues somewhat contrary to that which we have been accustomed to hear, as the cause of pellagra.

Published in this magazine with an unquestioned reputation, it is a direct appeal to all the people, and whether the doctor as an individual or the medical profession are ready to give full credence to the theories therein advanced yet it certainly is worth while that every interested doctor be informed of the teachings promulgated to his clientele.

We quote:

"Alessandrini and Scala definitely and finally determined that pellagra is caused by drinking soft water coming from clay soils containing no alkalies. The toxic mineral is colloidal silica, derived from the clay in colloidal solution in the water. Soft or "freestone" water will carry about twenty-five parts per million of colloidal silica when there are no alkalies in the water to precipitate it. Colloidal silica has long been known as a cumulative poison. Its symptomatology is identical with pellagra.

They further found that pellagra has a geological-geographical distribution, corresponding to the geographical distribution of certain geological areas, where the soils are derived from the disintegration of the igneous, crystalline and metamorphis rocks, such as granite, porphyry and feldspar. All such soils are clays. The small amount of original alkali in them is soon washed out and the soils become acid. Colloidal silica is dissolved out of the soils into streams, wells, springs and ponds. In the absence of alkalies, this colloidal silica remains in colloidal solution and is taken in the drinking water.

They direct that wells and springs be cleaned out and walled up with limestone; that they be curbed, so that clay may not wash in from the top; that a quantity of broken limestone be placed in the bottom.

After a lengthy clinical research they determined that pellagra is cured by the hypodermic administration of a ten per cent solution of sodium citrate. One cubic centimeter was given daily for fifteen to thirty days, then on alternate days for a similar time. Under this treatment pellagrins recover without change of labor, diet, domicile or sanitary environment. The success of this treatment has been confirmed by numerous Italian authorities. Under the prophylaxis and treatment recommended, Italy was practically cleared of pellagra during the World War.

Pellagra in the United States is an endemic and not an epidemic disease. It is confined to the Atlantic and Gulf Coastal plains, the Piedmont and Ashland plateaus, small areas of the Pacific slope, certain inland areas whose soils are derived from the Pennsylvania shales, and to areas covered with the glacial drift so thick as to govern the surface water supplies. In our research in the United States we have determined that where the calcium in the soil is less than one-half per cent, the region is pellagrous; where the calcium of the soil is between one-half and one per cent some pellagra may occur; where the calcium is one per cent or more, there is no pellagra.

In the Soutn there are three areas known as "black prairies." One of these is the area underlaid by the geological formation known as the "Selma chalk" in Mississippi, Alabama and Georgia. Another crosses Mississippi and Alabama further south and is the area underlaid by the "Jackson formation." Another is the "Black prairies" of Texas, an area underlaid by cretaceous rocks. These areas are not pellagrous except where overlaid by the La-Fayette formation in sufficient thickness to be the source of surface water supplies.

Comparing geography with geology, this means that pellagra is endemic in Maryland, Virginia, North and South Carolina, Georgia, Florida, Alabama, Mississippi, Texas, Oklahoma, Arkansas and parts of Tennessee Kentucky and California. A few cases can usually be found in the Middle Atlantic and New England States, and in Michigan, Wisconsin and Illinois, because of the glacial drift. A few also will be found in Missouri and Southeastern Kansas, where the soils are derived from Pennsylvania shales.

The findings of this research apply all over the world. The prevention and cure of pellagra are so simple, so scientific, so cheap, that they are at the command of all. Every patient in the endemic district can use the measures of prevention—put lime in the drinking water. Every physician can cure the disease by the hypodermic administration of sodium citrate. Pellagra should no longer be a social or economic menace to the South. The stigma of poverty, famine, contagion and pestilence is at once negatived by the simple scientific truth. Alarmist propaganda finds no place in view of the facts. Political doctors should no longer be able to deceive the public, the medical profession and the Congress of the United States.

If the measures indicated above are

adopted by public health authorities, by the medical profession, taught in the public schools of the South, and practiced by the people in the endemic area, pellagra would soon disappear from our Southern States."

Mental Attitude.

Your mental attitude will make you or break you. Your mental attitude tells the story.

You are what you are because of your mind.

The difference between man and the lower animals is entirely due to mind power. Whether you sit in the President's chair or in the seat of the lowly your mind has taken you there. You can think yourself sick or think yourself well. You can think yourself rich or think yourself poor. You can think yourself a saint or think yourself a devil.

You are cast down, broken hearted, hopeless and helpless, largely or entirely because of your mind.

Your mental attitude will take you up to heights sublime or cast you down in a sea of despair.

Whatever you do, fight for the proper mental attitude.

Eliminate destructive thoughts.

Cultivate thoughts that have an upbuilding influence.

A hearty laugh, a smile, is contagious —more so than disease.

A good joke is sometimes appreciated even at tragical moments. And if you cannot find humor in life you are doomed to mediocrity or worse. Wholesome fun, even when it becomes uproarious, is a factor of great value to mental and physical development.

Success in life means mastery of your own mind. Learn to smile at difficulties. Learn to fight with might and main against every influence that tends toward hopelessness.

The future is bright. Life is beautiful. The sun will shine and everything is coming our way. That's the attitude. Stick to it day after day.

If you fall by the way, don't lie and mope but arise and enter anew the fight for life's most glorious rewards.

The North Carolina Tuberculosis Association.

The North Carolina Tuberculosis Association met in annual session October 6-7 at Greensboro, N. C.

On the program for the first general session was an address by Dr. James A. Miller from New York City and another by Dr. Charles J. Hatfield, also of New York City.

At this session Mr. F. D. Hopkins, National Tuberculosis Association, conferred the Rank of Kinght Bannerett on two classes Modern Health Crusaders that have reached a state of 100 per cent nutrition under the direction of Mrs. Dorothy Hayden, Guilford County Public Health Nurse.

At the meeting of the Medical Section throughout the day October 7 there were 15 papers and addresses, discussing the various phases of the tuberculosis problem and in the Section on Modern Health Crusade as many more discussing the various phases of the Modern Health Crusade.

North Carolina can well be proud of her achievement in controlling the death rate from tuberculosis. The statistics show that in 1915 the death rate from tuberculosis throughout the registration area of the United States was 145 per hundred thousand, while at that time the North Carolina rate was 155. In 1920 the United States death rate had been decreased to 130, while North Carolina had decreased her rate to 113. With 10 above the general average in 1915 as a handicap North Carolina passed the others in the race and finished 1920 with a lead of 17.

Errata.

We wish to correct the following typographical errors in the September issue:

Page 446, line 28, second column, this disease does not concern us directly.

Page 447, line 29, second column, containing pus and mucous * * *

Page 447,, line 31, second column The disease is manifested.

Page 447, line 43, second column, since the earliest record.

These errors appear in the article by Dr. Edward J. Wood, and materially obscure the thought he wished to convey.

Gynecology and Obstetrics

Robt. E. Seibels, M. D., Department Editor

Transperitoneal Cesarean Section.

Before each operation Gordon G. Copeland, Toronto, Canada (Journal A. M. A., August 6, 1921), explains to each of his assistants the exact procedures he will probably perform, and how and when he will expect them to carry out the particular parts he will assign to each of them. This is an absolutely essential part of his technic. These details are described. As for the operation itself: An incision is made from above downward for about 5 inches, more or less, depending on the patient. The incision is started about an inch above and an inch to the right of the umbilicus to compensate for the usual dextrarotation of the uretus, and also to prevent the wound being drawn down into a hole, which happens if the cut is too close to the umbilicus, which sinks in during convalescence. The peritoneum is opened. The uterus, still in the abdomen, is opened in its anterior upper third in its midline, using a fresh knife. Generally, three strokes are employed in making the 5 inch opening. The membranes are opened, and a foot grasped and the child carefully extracted. The afterbirth is removed and 1 c.c. pituitary extract injected into the uterus in different parts. In closing the uterine wound deep bites are taken through the whole of the uterine muscle down to the mucosa, using a running suture. Usually one layer to the muscle is sufficient, occasionally two. The peritoneal surface of the uterus is inverted with a Cushing suture. When finished, no sutures show, the uterus is quite smooth, and only two knots are visible. Adhesions are minimized. In the average operation, Copeland asserts he has taken five minutes from the time of the first skin cut.

Gynecological Backache. N. York M. J., 1921, cxiii, 142. Dr. E. A. Bullard.: Certain surprising observations made in the postoperative follow-up clinic at the Woman's Hospital, New York, during the past few years led Bullard to make an analytical study of backache. In a series of 721 cases of this malady 85 per cent were cured by an appropriate operation. Bullard divides the cases into nine groups and shows that there were a number of cases in each in which the operative results were anatomically excellent, but the backache was unrelived.

Group 1 included 129 cases of retroversion of the uterus uncomplicated by any other gynecological abnormality. In this series the backache might easily have been due to the displacement, but the end-results proved that in 20 per cent neither this nor any other gynecological condition was responsible.

In Group 2 were 68 cases of retroversion of the uterus with adnexal inflammation. Elimination of the pressure of an adherent uterus or a tubo-ovarian mass, or relief of the drag of adhesions seemed to effect a cure in 87 per cent. In 13 per cent the backache was probably not due to a pelvic condition but its cause was not ascertained.

In Group 3 were 19 cases of adnexal inflammation. The results of operation seemed to justify the opinion that salpingitis with adhesions may produce backache as all but 2 of this group were cured by ablation of the inflamed tubes or of both the tubes and ovaries and the release of adhesions.

Group 4 included 84 cases of uterine prolapse of various degrees. Eighty-nine per cent were relieved by operation, the backaches probably having been due to the drag on the pelvic supports. In the cases unrelieved the operation was anatomically satisfactory and no pelvic lesions were found which would explain the continued pain.

In Group 5 were 46 cases in which only a plastic operation was performed for some conditions such as a cystic, eroded, lacerated, or hypertrophied cervix or chronic endocervicitis. The backache was cured in every case. This group, however, is too small to warrant conclusions.

In Group 6, which comprised 23 cases of uncomplicated retroversion of the uterus with lacerations of the perineum or cervix, operation resulted in a cure in every instance.

Group 7 included 7 cases of uncomplicated ovarian cyst. The backache was

cured by operation in 5 cases and unrelieved in 2.

In 38 cases of fibromyomata which made up Group 8 the backache was cured in 33 cases by hysterectomy and unrelieved in 5 cases.

Group 9 included 307 cases in each of which two or more conditions were present and one of the conditions was capable of causing backache. Of this series, 260 cases were cured by operation. The remaining 47 were unrelieved.

Bullard is of the opinion that probably much more than 15 per cent of the cases of backache in women are not gynecological as in his series presenting one or more common gynecological causes of backache that percentage was not relieved by anatomically satisfactory operations, and from 15 to 20 per cent of all women with retroversion or prolapse of the uterus, pelvic inflammations, obstetrical lacerations, or pelvic tumors do not have backache. Closer co-operation with the orthopedist, the internist, and the neurologist should enable the gynecologist to diagnose and treat backache in women more efficiently.

Urology

A. J. Crowell, M. D., Department Editor

The Anatomical and Experimental Study of Sacral Anaesthesia.

J. E. Thompson, Ann. Surg. 66:718-727.

Sacral anesthesia has become so firmly established in the surgical clinic of the John Sealy Hospital as one of the safest and most valuable means of producing local anesthesia in the regions supplied by the sacral nerves, that it has passed completely beyond the experimental stage. It is the custom of the author to inject 30 c. c. of the solution into the sacral canal and give it in time to diffuse along the space outside the dura mater where it bathes the peripheral nerves before they pass out through the intervertebral foramia. The quantity injected is 30 cc., and the solution is made by dissolving three No. A tablets in 30 c. c. of distilled water and adding ten drops of a 50 per cent solution calcium chlorid. (The composition of the A tablets is novocain 0.125 gm.; suprarenin 0.000125 gm.) As a rule one injection is sufficient and at the expiration of half an hour anesthesia is complete in the branches supplied by the sacral nerves.

The quantity of novocain used has been considerable, as much as 0.750 gm. having been introduced into the peridural space in the two injections. As far as the author's experience goes he has never seen evidence of toxic symptoms.

The period of onset, the area of distribution and the intensity of the anesthesia show considerable variation. The author has found that the region of the anus seems to lose its sensibility first and that operations involving cutting and burning can be performed within ten to fifteen minutes after the injection has been made.

The author has found that the greatest intensity of action is shown in the areas supplied by the sacral nerves from the second downward, but that it extends in many cases upward beyond the second sacral as high as the upper lumbar and lower dorsal nerves. In one case the injection was made at 10:17 a. m., and at 11:16 a. m. anesthesia was complete below the level of the umbilicus and was associated with loss of sensation and motion in both legs.

A study of the sacral canal and the hiatus sacralis was thought advisable in order to smooth out the mechanical difficulties of the operative technique, as a rule, very little difficulty is met with clinically in passing the needle into the sacral canal. In a thin subject the bony margins of the hiatus sacralis can be felt distinctly. In fat people the bony landmarks are obscure and a good plan is to introduce the needle about an inch higher up than the end of the sacrum which can usually be felt plainly. In cases in which the coccyz is ankylosed with the sacrum an extra allowance must be made. The direction of the needle should be upward exactly in the middle line, toward a point about 2 cm. deeper than the prominent spinous process of the first sacral vertebra. Some resistance will be felt as it penetrates the fibrous membrane closing the hiatus. * * * It is not necessary to introduce the needle farther than three or four centimeters, although the author's experiments and clinical experience prove that

the risk of wounding the dura is very slight. * * * If the needle lies superficial to the sacrum there is usually a considerable amount of resistance to the flow and one sees immediately a subcutaneous tumor form at the site of injection. The whole operation can be rendered practically painless by preliminary infiltration of the skin and subcutaneous tissue or the hiatus with a solution of 0.25 per cent novocain.

For the purpose of making the study more complete the author made a careful examination of the available "sacra" in the dissecting room of the University of Texas. In all 33 specimens examined the bones had been macerated and cleaned. * * * A strong knitting needle was used as a probe so as to preclude any possibility of bending and imitate as closely as possible the behavior of the needle used for making injections. The probe was passed through the hiatus upward along the sacral canal; and if arrested the locality was compared with that of the sacral foramen and so noted down on a table. * * * (Table given by author.)

* * * In 24 out out of the 33 specimens examined the probe passed along the whole canal. * * * In only one case (No. 16) was the canal so narrow as to raise doubts whether a needle could be passed along it. * * * Even in No. 16, although the needle did not pass higher than the fourth sacral foramen, it entered the canal high enough to allow the needle to pass into the loose cellular space in which the sacral nerves lie. There seems to be no doubt that if the needle penetrates the fibrous membrane that closes the hiatus and enters the loose cellular space, the injected fluid will pass upward around the nerves and around the dura mater.

Orthopaedics

Alonzo Myers, M. D., Department Editor

Reconstruction Operation for Ununited Fracture of Neck of Femur.

The Whitman reconstruction operation removes the head of the bone. The trochanter is chiseled off in a line continuous with the remaining portion of the neck, with the aim of providing a broad, flat bearing surface. The surviving portion of the neck is thrust within the acetabulum to act as a new head, while the bone bared by removal of the trochanter forms, as it were, a new neck. All operations hitherto devised have disregarded the importance of the trochanter and the muscles attached to it. In this operation it is displaced downward on the shaft of the femur as far as its muscular attachments will permit, and there secured. The muscles thus put on the stretch and later, when the patient gets about, resume their normal functions of abduction and rotation. Armitage Whitman, New York (Journal A. M. A., Sept. 17, 1921)states that to the patient desiring relief from the disabilities incumbent on ununited fracture of the hip, this operation offers relief of pain and a weight-bearing extremity. Given an energetic and persistent subject, ultimate function may become at least as good as what is generally regarded as a satisfactory result following union of the original fracture.

The Ilioscral Joint.

H. R. Allen, Indianapolis (Journal A. M. A., Sept. 10, 1921), suggests that the entire pelvis be shown on each picture; then study the pubes where the long indicators of iliosacral displacements may be recorded on a magnified scale. The picture should be taken with reference to bringing out lack of pubic symmetry. To demonstrate the result of pelvic girdle strain, have the patient stand on one leg for one picture and on the other leg for the other picture. By grasping the crest of the ilium or the pubes or the ischial tuberosity on each side of the body, an opportunity is afforded to exert compression or traction or rotation as an aid to other manipulations in the reduction of fractures, as well as in the reduction of dislocations. Through the rectum, a firm grip can be taken on the lower end of the sacrum. By properly employing the manipulation just mentioned for expanding and maneuvering the segments of the pelvic girdle, we may simplify the reduction of difficult cases and avoid some open operations.

Fracture of Spine or Tibia.

Among about 1,000 fractures, Joseph J. Kurlander, Cleveland (Journal A. M. A., Sept. 10, 1921), has observed three cases of fracture of the spine of the tibia. He reviews the anatomy of the knee joint, and discusses the mechanics producing the injury. He is of the opinion that the tibial spine is practically always fractured by indirect violence, and that fracture or avulsion of the spine is due to sudden and powerful traction on one or both crucial ligaments, but usually the posterior. The tibial spine is so situated and protected by nature that it is practically impregnable to direct assault. In his three cases the history shows that a powerful traction on the crucial ligaments produced the injury in each case. The violence is applied while the knee is flexed and abducted and usually externally rotated. This injury may also occur if the knee becomes suddenly and powerfully hyperextended. There is sudden severe pain. The patient is unable to arise or straighten the knee. Effusion and swelling are rapid, and there may be marked ecchymosis. Fracture of the tibial spine can be diagnosed positively only by means of the roentgen ray. The most presumptive evidence is blocking or locking of the knee, preventing extension; but a displaced semilunar cartilage may produce this phenomenon, together with the identical signs of fracure of the tibial spine. The treatment should be entirely conservative and should give way to operative interference only when repeated attempts to obtain full extension prove impossible. The knee should be manipulated under anesthesia until full extension has been obtained, and then immobilized in a splint or preferably in a plaster cast extending from toes to groin. It is best not to disturb this for about eight or ten weeks, at which time the cast is removed and massage and passive motion are instituted. Should the crucial ligaments be ruptured, the same treatment should be followed, except that immobilization is maintained for at least three months or more. The results of conservative treatment are usually highly satisfactory. Where chronic disability due to blocking of extension persists, it is best to remove the offending fragment of bone through the split patellar incision. The postpatellar pad of fat is removed, any obstructive mass is removed and the knee straightened. The incision is then closed. No suture of the patella is necessary. The leg is then immobilized for six weeks, after which the dressings are removed and motion commenced.

Neurology

R. F. Leinbach, M. D., Department Editor

Blood Chemistry in Nervous Diseases.

The study of metabolic disturbances, as evidenced by changes in the absolute and relative amount of nitrogenous and other chemical substances in the blood stream is being carried on more and more painstakingly, both in this country and abroad.

While results brought forward have not, so far, established any startling etiological facts, yet every thorough study of this kind advances our knowledge of the pathological picture of any given disease. From the pathological laboratory of Danvers State Hospital comes a comprehensive study of the blood chemistry in catatonic Dementia Praecox. Seventy-five per cent of thirty-two cases examined showed a decrease in uric acid. Forty-seven per cent of cases showed an increase in blood sugar. The average deviation of each constituent of the patient's blood is higher than that of the normal suggesting an unstable metabolic activity.

An excellent study of the blood chemistry of cases of migraine has been reported by Ramond & Rouzaud of Paris in the Revue de Medicene, February, 1921. Their study which embraced fifty cases was carried out on subject of long-standing migraine. Their investigations were made between the attacks and on blood taken from the veins in the morning hours in the fasting condition. Figures obtained by them for the various nitrogenous constituents of the blood of non-protein nature, showed in practically every case an elevation of the percentage of these constituents. They have drawn conclusions as to the relationship between

these blood changes and the pathogenesis of migraine, which are perhaps not entirely conservative. They consider that there are three functional deficiencies underlying the migrainous constitution, viz.: hepatic, renal and cardiac, and that of these the renal and hepatic factors are most important. Whether or not future investigations will corroborate this hypothesis, it is safe to conclude that their chemical study of a fairly large series of migrainous cases has shown an unstable metabolic state in this form of functional disease.

Conjugate Ocular Movements.

Gordon Holmes, of London, has reviewed in the British Journal of Opthalmology of June, 1921, current views of the nervous tracts and mechanism by which the lateral and vertical associated movements of the eyes are conjugated. Cortical centers from which associated movements of the eyeballs have been presumed to be directed have been described in the second frontal gyrus, in the angular gyrus of the parietal lobe, and in the visual cortex of the occipital lobe. Holmes considers that the evidence in favor of volitional associated movements in man being directed by centers in either the angular gyrus or the occipital lobe, is insufficient, but holds that there are cortical centers in the second frontal gyrus which are unquestionably dominant in the production of associated movements of the eyeballs. The other two cortical areas, especially that in the occipital lobe, may functionate as higher reflex centers in the same manner, in the production of conjugated movements, in response to visual or other stimuli. Bulbar centers regulating conjugated movements have been presumed to exist in or very close to the abducens nuclei. Holmes argues that there is probably a supra nuclear center in the neighborhood of the sixth nerve nucleus controlling the associated movements, but that this nucleus is distinct and separate from that of the abducens nerve. Association tracts uniting the sixth and third nerve nuclei are found in the posterior longitudinal bundle, as has been recognized for a long time.

Supra nuclear centers for the control of conjugate vertical movements of the eyeballs, Holmes assumes must exist in the hind brain also. Their anatomical location, however, is not known.

Sensory Changes in Pernicious Anaemia.

The importance of the investigation of subjective sensory symptoms—tingling, numbness and other paraesthesias —so often complained of by patients, has been well pointed out by Hamilton and Nixon of the University of Minnesota in a review of a series of cases of pernicious anaemia.. They have pointed out that changes in the nervous system occur in 75 to 80 per cent of cases of pernicious anaemia as presented in the ordinary physician's practice. They have shown further that these subjective sensory symptoms are often the earliest complaints of cases of pernicious anaemia.

Deep sensibility is relatively more impaired than superficial sensibility, but there is by no means a normal sensibility to touch, prick, etc., as tested objectively. These subjective sensations are due to degenerative changes in the peripheral nerves and are not functional. They have shown that such sensory symptoms may be present and due to peripheral nerve degeneration with no objective changes in the spinal cord. The important lesson to be learned from their findings in pernicious anaemia is that the frequently encountered complaints of numbness and tingling in the extremities should never be passed over lightly, but should always lead to a careful investigation of the objective sensory phenomena and especially to a thorough blood examination for evidence of an obscure underlying cause.

Nurses' Corner

Edith M. Redwine, R. N., Dept. Editor

At the September meeting of District No. 1 of the North Carolina State Nurses Association a committee was appointed to take under consideration the advisability of establishing a Central Directory for Nurses in Asheville and at a meeting of the Buncombe County Medi-

cal Society September 19, 1921, at which the nurses were in the majority, a resolution was introduced, seconded and carried endorsing the establishment, Asheville District No. 1, of the Nurses Association—a Central Directory for Nurses in the City of Asheville."

It was also desired to operate a Nurses' Club in connection with the Registry. A call meeting of the Nurses' Association was held September 27th, at which it was decided to rent a house and establish both club and directory at once. Miss Belle Campbell was unanimously elected as registrar and house mother and a large house at 223 Chestnut Street rented and October 1st the old directory was taken over by the Nurses' Association under the direction of Miss Campbell.

In addition to bedrooms for a number of nurses there will be several reception rooms and an assembly hall and it is hoped that this, the first club building opened by women in Asheville will be the center of many social and professional activities.

The object of such a movement was outlined as follows:

"To uphold the high ideals of the nursing profession.

To secure more efficient nursing service for the community.

To aid the doctors in the care of their patients and to co-operate with them in the development of community interests.

To secure the betterment of conditions surrounding the lives and work of graduate nurses.

To bring nurses together in community and club life for the advancement of professional and social interests.

To establish nursing headquarters where inormation may be obtained and visiting nurses assisted in various ways."

An interesting feature of the North Carolina State Fair will be the exhibit of the North Carolina League of Nursing Education.

Twenty - nine accredited training schools have up to date sent exhibits and others are expected since there are forty-nine accredited schools of nursing in this state.

Eye, Ear, Nose and Throat

By J. P. Matheson, M. D , Dept. Editor

A New Use of Holmes Pharynogoscope in Diagnosis of Antral Disease.

In 1893 Caldwell gave his memorable paper on the operative work in diseases of the maxillary sinuses. Since that time the operative procedures have not materially changed, but the diagnosis of antral disease has become more simplified by the use of electrical instrumentation. By transillumination we are usually enabled to tell at a glance whether there is a great deal of trouble in the antrum, the x-ray also is indispensible. There also may be present a purulent discharge from the nose, pain on pressure and headache more severe over the antral region, etc.

The nasal puncture of the antrum and washings will reveal the presence of pus in acute and chronic infection of the same. This, however, does not give the desired information as to whether a radical antrum operation is necessary. In case there is doubt as to the advisability of a radical operation; to all rhinologists who make a large opening on the floor of the nose into the antrum for drainage and treatment, we would advise the use of the pharyngoscope for inspection. C. N. Peeler, M. D.

Squint: When Shall We Operate?

Observation, based on a careful study of 260 private cases, has convinced A. S. Green and L. D. Green, San Francisco (Journal A. M. A., Sept. 24, 1921) that less than 25 per cent of squinting eyes that come to the ophthalmologist are improved by non-surgical methods. It thus leaves more than 75 per cent of these patients to be corrected by operation or the alternative of going for the rest of their lives with the deformity. Only 7 per cent of their patients' eyes were entirely straightened by non-operative means, when carefully measured. And of these patients a large proportion resumed their squint when the glasses were taken off. None of the 18 cured patients were more than eight years of

age, while 13 of these, or 72 per cent, were six years of age or under. The Greens believe that great harm has resulted from the advice so frequently given by physicians to parents to wait until puberty to see whether the child will outgrow the squint. The early correction of squint is also desirable for the mental or psychic effect it has on the patient. It is of vital importance that the family physician and the public be impressed with the necessity of the child's having early attention, and not wait until puberty in the hope that the deformity will be outgrown. Procrastination means probable amblyphobia in the deviating eye and operation later, in the vast majority of cases, for cosmetic reasons.

News Items

Program of the First Annual Scientific Session of the Section in Neurology and Psychiatry.

The first meeting of the section on Neurology and Psychiatry of the Southern Medical Association will be held November 14 at Hot Springs, Ark.

Part 1.

Psichiatry.

A Symposium on Early Detection of Mental Disorder.

1. An Evaluation of Intelligence Tests; invited guest, Professor Fletcher of Tulane University and Sophie Newcomb College.

Discussion:

2. Early Recognition of Mental Diseases, Dr. Roy M. Chapman, Sheppard and Enoch Pratt Hospital, Towson, Md.

3. Psycho Neuroses in their Incipiency, Dr. Sidney Schwab, St. Louis, Mo.

4. Early Manifestations of Psycho Neurosis, Dr. Louis R. Bisch, Asheville, N. C.

Discussion (of above three) opened by Dr. Bondurant, Mobile, Ala., and Dr. Somerville, Memphis, Tenn.; Dr. S. Roberts, Atlanta, Ga., and Dr. Bliss, St. Louis, Mo.

5. Psycho Neuroses in Public Health Hospitals, Dr. Benton, Miami, Fla., U. S. P. H. Hospital, Gulfport, Miss.

Discussion: Dr. W. W. Graves, St. Louis, Mo., and others.

Part II.

Neurology.

1. Chairman's Address: The Treating of Neurology, Phychiatry and Psycho-pathology, and their Relation to General Medicine and Other Specialties, Especially the Eye, Ear, Children, Orthopedics, Gastroenterology and Genito-Urinary Disease.

2. The Pathology of Pellagra, from Clinical and Neuropsychiatric Aspects, Dr. W. M. Bevis, U. S. P. H. S. Hospital, Augusta, Ga.

Discussion, Dr. R. N. Greene, Jacksonville, Fla.; Dr. E. P. Bledsoe, P. H. S.

3. Muscular Atrophies and Dystrophies Contrasted with Emaciation, Dr. Beverly Tucker, Richmond, Va.

Discussion, Dr. W. W. Graves, St. Louis, Mo.; Dr. Sidney Schwab, St. Louis, Mo.

4. Presentation of a Patient with Progressive Lenticular Degeneration, Dr. M. L. Graves, Galveston, Texas.

5. A Peculiar Case of Hysteria, Dr. E. Bates Block, Atlanta, Ga.

Discussion, Dr. Sidney Schwab, St. Louis, Mo., and Dr. Houston, Augusta, Ga.

Demonstration of Specimens, Charts, etc.

Fourth (N. C.) District.

The Fourth District will hold its regular meeting at Wilson, N. C., November 8th. Dr. E. T. Dickinson, Wilson, N. C., is Councilor for this district.

Eigth (N. C.) District.

The regular meeting of the Eighth District Medical Society was held September 15, 1921, at Elkin, N. C. Dr. J. K. Pepper, Winston-Salem, is Councilor for this district.

The program for this meeting follows:

1. Prayer, Rev. Wm. T. Baucom.
2. Address of welcome on behalf of town, Dr. J. W. Ring, Mayor.
3. Address of welcome on behalf of

Surry Medical Society, Dr. Moir S. Martin, Mt. Airy, N. C.
4. Response, Dr. D. A. Stanton, High Point, N. C.
5. "For the Good of the Order," Dr. Hubert A. Royster, Raleigh, N. C.
6. The Differential Diagnosis of Gastric Disorders, Dr. Frederick M. Hanes, Winston-Salem, N. C.
7. Ectopic Gestation with Brief Report of Cases, Rigdon Dees, Greensboro, N. C.
8. Subject Unnanounced, Dr. J. T. Burrus, High Point, N. C.
9. "The Apparent Cure of Syphilis," Dr. H. B. Rowe, Mt. Airy, N. C.
10. Pyloric Stenosis in Infants, Dr. A. de T. Valk, Winston-Salem, N. C.
11. Vaccination for Diphtheria, Dr. Wingate M. Johnson, Winston-Salem, N. C.
12. Subject unannounced, Dr. Henry F. Long, Statesville, N. C.
13. Infected Wounds, Dr. C. S. Lawrence, Winston-Salem, N. C.
14. The X-Ray Diagnosis of Chronic Appendicitis, Dr. H. B. Hyatt, High Point, N. C.

7:30 P. M.—Banquet. McNeer's Warehouse.

Tenth (N. C.) District.

The Tenth District Society held its annual meeting at Murphy, N. C., Wednesday, October 5. The meeting continued throughout the afternoon and evening. The program was exceptionally interesting. Dr. H. A. Royster, President of the North Carolina Society, and Dr. Rankin, Secretary of the North Carolina State Board of Health, addressed the meeting.

Dr. Eugene B. Glenn, Asheville, is Councilor for the Tenth District.

Virginia Medical School—Where?

In response to a call from Governor Davis the Board of Visitors of the University of Virginia and the Board of Visitors of the Medical College of Virginia met in Richmond on October 4, to consider the matter of the coalition of the two medical schools in the state and the most advantageous location for the resulting single school. It is understood that the Board of Visitors of the University voted as one for the establishment of the school in Charlottesville, while the Board of Visitors of the Medical College of Virginia voted with absolute unanimity that the school be located in Richmond. Final settlement of the problem has been legally placed in the power of the members of the General Assembly, which will soon convene in Richmond.

Richmond Academy of Medicine and Surgery.

At the meeting of The Academy of Medicine and Surgery of Richmond, Virginia, on the evening of September 27, Dr. E. G. Hill reviewed in detail the diagnosis and the treatment of fractures of bones. Dr. S. W. Budd read a carefully prepared paper on the treatment of sarcoma by radium. Clear-cut statements were made with reference to the chemical and physical properties of the substance which make possible its therapeutic uses. Lively and interesting discussion was provoked. Dr. W. Lowndes Peple was emphatic in the expression of his opinion that continued investigation of the malignancy problem will eventuate in the discovery that malignancy is but another evidence of infection.

100,000 Copies.

The January issue of the *Medical Review of Reviews* is to be sent as a New Year's gift to practically every physician in the United States and Canada. This issue will be one of the most valuable which has ever been prepared and we trust that the physicians who receive this number will read it with interest and profit.

We congratulate the *Medical Review of Reviews* on this progressive move and trust they will meet with success in a great undertaking.

Richmond Doctor Burned to Death.

Dr. Russell Stewart Wingfield of Philadelphia, who was seriously burned August 14 in a fire which destroyed the American Red Cross children's hospital in Salonika, died August 20 after a week's fight against shock and nephritis. Funeral services were held August 23 at the American Red Cross headquarters in Salonika, full military honors being paid by a detachment from the Greek regular army. The body will be

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shipped to the United States for burial.

Dr. Wingfield was 26 years old. He was born in Richmond, Va., where his parents live at 806 Fourth avenue. He went to Europe in February, 1921, for service with the Red Cross, and was immediately sent to Salonika to take charge of the children's hospital at the Kalamaria Refugee Camp.

When fire broke out in the hospital dispensary on Sunday night, Dr. Wingfield succeeded in saving all the patients and personnel, with the exception of one Greek interpreter. His heroic efforts, however, cost him very severe burns about the face and arms, and his condition had been critical throughout the week.

Dr. Wingfield was a graduate of the John Marshall High School of Richmond, the University of Richmond, and the Medical College of Virginia. He enlisted in the army medical corps immediately on the American declaration of war, and served throughout the war as a State inspector of draft boards. After the war he became resident physician at the Stetson Hospital in Philadelphia, leaving this post to go to Europe last February.

Dr. David R. Perry has been elected whole time health officer for Davidson County (N. C.) succeeding Dr. R. V. Yokely, who resigned June 1 and has resumed private practice at Thomasville.

Dr. Perry is a graduate of Wake Forest, A. B. and B. S., and of the Jefferson Medical College with two years as resident physician at the Jefferson Hospital. He is a native of Wake County.

Dental Clinic for Charlotte, N. C.—The Charlotte Dental Society has voted hearty support and co-operation with the health authorities in establishing a School Dental Clinic, where every pupil may have dental examination. The State Dentist will be in charge and will do necessary dental work for those who are unable to pay while those able to pay for needed work will be given a report of the findings with recommendation to consult their own dentist.

Dr. W. J. Crosland, Bennettsville, S. C., died September 25. He was a graduate of Wofford College in 1895 and of the Charleston Medical College in 1898.

Southern Medicine and Surgery

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"THOUGHTS ABOUT THE PREVENTION OF BLINDNESS."*

Dr. Jos. A. White, 200 East Franklin Street, Richmond, Va.

Of all the ills that befall the human race, none is more far-reaching in its consequence, none more dreaded, none to be more deplored than for a seeing human creature to lose the sense of sight. Having once known what sight means, what delight it is capable of giving, what happiness can be derived from it, what vistas of enjoyment it opens up from the various pictures of this beautiful world and the beautiful things therein contained, we, who are the fortunate ones with seeing eyes, can appreciate what a dread affliction blindness must be with every avenue of pleasure, except music, cut off by this loss of sight. It is worse than death, for death after all is only the great adventure, possibly merely the closing of one portal and the opening of another into an unknown realm whose mystery we can penetrate in no other way. Therefore Death may be preferable to Blindness. Still we medical men the world over are fighting death, trying by every means in our power to ward off the grim Reaper as long as possible and prolong human life by preventing the various diseases that are the lieutenants of this dread specter. The Public Health Service, the State Boards of Health, the City Health Boards are formed for this specific purpose, to take care of the Health of the People, to abolish disease, to prolong life and to ward off death: All the medical men throughout the world are enlisted in the same crusade and cooperate with these various governmental activities in every way they can. Millions of dollars are appropriated by governments, states, cities and other committees to help this cause, for even the healthiest among us know that they have to die, and whilst death may not be the dreaded thing most people think it is, none seem to be in a hurry to penetrate its mysteries, and want everything done to put the enlightenment off as long as possible. But "Blindness" is not like death. It does not come to all—it comes out of the teeming millions of the Earth to but a few compared to the many. But these few are thousands and thousands, and for those to whom it does come, it is a living death. The pity of it! When we think that in the larger number of these unfortunates, it might have been prevented. Something has been done along this line in the last few decades, but much still remains to be done.

In my professional career of nearly 50 years, coming into daily contact with people suffering from eye troubles, people threatened with blindness or already blind, both curable and incurable, it has been my sad experience to see men and women with everything to make life pleasant cut off from all active participation in their world's work, from all avenues of enjoyment by loss of sight, and dependent on others for their every need.

I have seen others with families to support reduced to poverty and beggary by the same deprivation. Can death be worse than this? And the pity of it is that many of these cases through a mistaken diagnosis, or no diagnosis at all, from ignorance or carelessness of their medical advisors, were allowed to go blind, incurably, when proper care or proper advice in the beginning of the eye trouble would have prevented this dreadful affliction.

No one expects a physician in these days to be thoroughly conversant with all phases of medicine and surgery. It is too vast a field for any one man's mind, but one does expect a graduated

* Read before the Tri-State Medical Association of the Carolinas and Virginia, Spartanburg, S. C., February, 1921.

practitioner of medicine to have acquired some modicum of plain common sense during his years of study and how to use it. If he were to notice any visual defect in himself, would he wait until blind to find the cause? Knowing little or nothing about eye diseases, would he even consult one of his medical friends about his trouble unless he knew him to be a reliable expert in such matters? Would he not go near or far, as the case might be, to get a satisfactory opinion as to his chances of improvement or cure? If he would do this for himself, how much more important to do the same for those trusting him as their medical advisor.

It would be like a clergyman trying to save his own soul whilst letting the souls entrusted to his keeping for spiritual guidance slide down to perdition. How would he face the Lord on Judgment Day?

Thousands and thousands of babies were allowed to go blind from ignorance or carelessness on the part of mothers and physicians. This one cause helped to fill the blind asylums everywhere and as public attention began to form on this evil, associations for its prevention were formed.

In 1903 the New York Association for the Prevention of Blindness was inaugurated, but it was ten years later that the A. M. A. appointed a Special Commission on Conservation of Vision, with branches in every state, giving lectures on this subject, distributing pamphlets and leaflets to the profession and the public, and trying to have legislation enacted to correct this evil.

Those of you who were engaged in this work know what heart breaking work it was, before we succeeded in getting results. Much yet remains to be done in this regard.

In addition to Ophthalmia Neonatorium, other causes of blindness in children are Keratitis, progressive Myopia, Trachoma, and hereditary blindness (the latter a question of Eugenics); among adults, Trachoma, specific infections such as purulent ophthalmia, retinitis, optic neuritis and atrophy, Glaucoma, shop injuries, wood alcohol.

I do not expect to go into these various causes of blindness in this paper as its object is merely to make another appeal for more careful attention on the part of the profession to cases of commencing loss of vision so that they may get the skilled treatment needed to save their sight.

Prevention of blindness is a civic duty and should appeal to all physicians, and to all Health Boards, City, State and Federal, and they should use all means of educating the profession and the public along this line.

The Public Health Service limits its activities to contagious diseases, or diseases propagated by impure water, mosquitoes or vermin.

To this class belong the preventable forms of blindness due to venereal disease and Trachoma, inasmuch as the control of venereal disease reduces the number of victims who lose their sight because of this kind of infection, whether purulent ophthalmia in babies or adults, or from the various forms of retinal and optic nerve troubles so frequently found in these cases.

In regard to **trachoma**, which was a scourge of our seaport towns, especially among the foreign population, in some of the Indian Reservations, and in certain mountain districts of Kentucky, West Virginia, and Virginia, where it had run riot unchecked for many years, the Public Health Service and some of the State Boards of Health have done a vast amount of good in curtailing this scourge and preventing its farther spread in the communities where it has been found prevalent.

However, in the zealous efforts to stamp out this evil, it has occasionally happened that errors of diagnosis have been made in confounding other hypertrophic conditions of the conjunctiva with trachoma and thereby inconveniencing families and alarming communities where Trachoma is unknown, but where folliculosis of the conjunctiva and vernal conjunctivitis are sometimes found—Trachoma leads to blindness by corneal complications, and spreads by the contagiousness of the secretions. Folliculosis never causes blindness as it has no corneal complications and is not contagious—and care should be exercised to avoid such an error which causes alarm and annoyance without sufficient ground for it. The school examiners who make periodical examinations of the school children under the supervision of State Boards of Health are not unlikely to make such an error—and where there is any question of a doubt

the case should be referred to an expert ophthalmologist for diagnosis.

Doctors are often responsible for persons going hopelessly blind by confounding commencing **Glaucoma** and optic nerve trouble with so-called incipient cataract. When a middle aged person notices any failure of vision, it is frequently considered a necessary consequence of increasing years, or of commencing cataract.

If this presumption is correct no harm results, but in many of these cases the trouble may be that dreaded disease glaucoma, or the equally fatal retinal or optic nerve affection. Waiting for an opportunity of being examined for glasses, or for the ripening of a supposed cataract to be operated on, results in incurable blindness when an early correct diagnosis would have saved the sight.

Increasing years or old age never of itself makes anyone lose his eye sight. His reading ability may be curtailed, but his distant vision will remain good.

Failure of **distant** vision means some pathological condition, and the case should at once be referred to a competent ophthalmologist, and many of them need the added service of a competent internist, because in some of these cases the underlying cause may be a focal infection from some intestinal auto-infection, or from the nasal sinuses, or the teeth. The trouble is not always local in the eye, as the eye is only a part of the human economy and is affected by various diseases of the general system. Such cases should be especially warned not to go to an optometrist or spectacle dealer, not because they may not get the correct glasses, for they sometimes do, but because the restoration of good near and distant vision by glasses does not mean that some disease of the eye is not present. If it is, they go away in fancied security because the glasses help and only find their mistake when too late to save them from blindness.

I have seen such cases from the offices of practitioners of ophthalmology who overlooked the incipient disease because the refraction examination gave perfect results.

No case should be refracted without also making an ophthalmoscopic examination of the interior of the eye and its eye ground and if there is any doubt in the mind of the examiner about the picture presented, the tension and field should also be taken. Even when the tension seems normal, the field may show contraction or a scotoma—for color or light.

The ophthalmoscopic examination may sometimes show striae in the lens periphery which are non-progressive, and do not always indicate advancing clouding of the lens, and this may lead to a mistaken diagnosis even by an ophthalmologist. I have seen cases of this kind when these striae have remained stationary for years—and cataract never developed, except as a later sequel of deeper-seated eye trouble.

The treatment of all the internal troubles of the eye, including glaucoma, that bring about blindness (excepting only cataract), must start from the beginning and is more preventive than curative.

In Glaucoma and optic nerve troubles, all sight lost can never be regained, except in Acute Glaucoma. Simple Glaucoma and chronic inflammatory glaucoma without acute exacerbations are easily overlooked, unless the patient notices a change in visual acuity or the eye shows some congestion, a so-called "red eye" which must not be confounded with conjunctivitis and treated as such. A red eye may be a simple conjunctivitis or a danger signal of serious trouble inside the eye and should be let alone if there is any doubt and referred to an ophthalmologist. Certainly no mydriatic should be used, as it might be fatal to the sight if the case were one of Glaucoma.

How many such cases of these various types of errors that may lead to blindness. I have seen, I am unable to state accurately, but they must have run into the hundreds in fifty years, and nearly all of them blind because of the mistake or carelessness of some physician who gave bad advice, and I am still meeting them occasionally, both in private and dispensary practice. Had the plain common sense with which most doctors are credited been used and recourse to an expert in eye diseases suggested, most of these pitiful cases would be seeing today.

If they were dealing with some other of the many diseases they are called on to treat, and the symptoms were at all obscure, they would not have hesitated to get the advice of some other practi-

tioner they thought could throw light on the case and save a life.

Why not have used the same care in regard to eye trouble that might lead to blindness, as in a case that might lead to the tomb, possibly the lesser evil of the two.

Commencing failure of vision is always serious and should be so regarded, and delay on the part of the physician consulted in seeking competent information is little short of criminal neglect. Ignorance is no excuse, because the less a physician knows about an eye the more important to consult some one who does. Possibly the worst offenders are those who think they know enough to pass judgment without sufficient knowledge to warrant their good opinion of themselves, an exemplification of the old saying that a "little knowledge is a dangerous thing."

I am aware I am telling you nothing new--the subject has been threshed out again and again in the last 20 years, but the fact that these cases occur constantly in the practice of every busy ophthalmologist shows that much remains to be done to awaken the medical profession at large to a realization of its importance and their responsibility.

Exactly how much good has been accomplished by the Campaign for the Conservation of Vision and Prevention of Blindness in the twenty years it has been going on is hard to say. That much has been done in lessening the evils of ophthalmia neonatorium and arresting the spread of Trachoma by the work of the Public Health Service and the various State Boards is undoubted, but statistical information on the subject is not to be had.

We hear about trachoma, but except in certain localities we rarely see a case —and we see fewer blind babies and fewer birth infected eyes. At least fewer cases are reported. In Virginia, the demand for the 1% solution of Nitrate of Silver by doctors and mid-wives is almost universal, I am told by the Chief of that Department in the State Board of Health, but I can get no information about the results. The law requires reporting such cases but there is no penalty for non-compliance. If babies' ophthalmia is as frequent as formerly, it is kept mighty quiet, but I take it for granted it is getting rare, in spite of the defects in the laws on the subject.

Now if a law of this kind, which works by an appeal to the sense of right in the medical mind, can do so much in doing away with one cause of blindness why cannot something be done by legal enactment or otherwise through the Health Boards calling on the medical profession to look more carefully after cases of failing vision, and see that they get proper treatment in time to save their sight, and this especially among the poor who are the greatest sufferers and who become a burden on the commonwealth when sight is gone. This is a no more Quixotic proposition than taking away your liquor by Federal enactment would have been considered ten or fifteen years ago.

There are clinics in all towns of any size where such cases can be sent to be treated and saved from blindness. At the worst it would be a means of calling the attention of the profession and the public to the risks that beset human eyes.

Trying to interest the profession along this line looks like an almost hopeless task. It is a kind of dead issue that is revived from time to time with hope that sometimes it will be a live one.

The few who hear about these things, or occasionally come across them in their reading do not give much thought to them, and forget them. Still this going back over old ground, ploughed over many times in the last twenty years, may bring forth fruit when least expected. It may not be time wasted. It may help to see our mistakes and avoid them in the future.

It may save some one from blindness, and if reminding you of what you have known all along and overlooked at times does that, the effort is not in vain.

THE HYGIENE OF PREGNANCY.*

By Greer Baughman, M. D., F. A. C. S., Richmond, Va.

Why should one write upon such a trite subject as hygiene of pregnancy at this time?

* Read before the Tri-State Medical Association of the Carolinas and Virginia at the Twenty-third Annual Session, Spartanburg, S. C., Feb. 16, 17, 1921.

The answer to that question can be found in statistics.

In 1919 Spain had 19.6 women to die in 100,000 women, while America had 14.9. There are about 2,650,000 utero-gestations in America every year. Of that number 15,000 women die. There are 150,000 still births and of the living children 115,000 die in the first four weeks of life. In Virginia in 1919 there were 61,493 birth; of these 2,723 were still births, making our still birth 1.19 per thousand. Our puerperal death rate was 18 per thousand while the death rate for the United States is 17.9. The deaths from child birth (336) about equalled that of typhoid (357) and was greater than that from diphtheria (268).

The hygiene of pregnancy is as definite a procedure as the hygiene of typhoid or diphtheria, except that in the case of hygiene of pregnancy we try to prevent disease and complications from interfering with a normal, physiological process.

I wonder after all if pregnancy is a normal, physiological process. There are certainly more pitfalls in her path than in that of her nonpregnant sister. A perfect bony pelvis is as rare as a perfect set of teeth. If a case is carefully followed through pregnancy, labor and puerperium some pathology due to the pregnant state will be found. Fortunately it is of such a nature that it can be corrected in most instances.

That every trouble with which pregnant women suffer can be overcome by the pregnant women no one believes, but certainly an immense improvement can be made in the mort ality and morbidity statistics by constant watching these cases.

Experience has taught me that pregnant women need to be seen, best at the doctor's office at least every two weeks until the ninth lunar month and every week from that time until delivery. There are cases of course that need much more attention than that. The advantages of having the case come to the office are many, not the least are that it saves the doctor time, it allows of careful examinations upon a suitable table, it gives the opportunity of immediate urinalysis and development of appropriate treatment at once, it encourages the women to go out for fresh air and exercise.

Of the many sides of this numerous fasseted question of hygiene, I purpose to discuss only three—the question of exercise, urinalysis and pelvimetry.

I have seen only two cases in which violence seemed to precipitate miscarriage or premature labor—one was a miscarriage at the fourth month in a woman who had two years before a Caesarian Section for eclampsia, who miscarried after a sea bath at Virginia Beach, where the surf is violent; in another a premature rupture of the bag of waters following a fall upon the ice. In other cases, particularly of miscarriage, we have noted syphilis, self-induction, some disease of the mother or the foetus and membranes.

My women continue to live their lives so far as exercise is concerned just as they did before becoming pregnant. The exceptions are in those cases where we find the cervix open and in those who chronically abort without a reason that we can discover. Horesback riding, surf bathing and violent tennis are the only sports that are interdict. A good brisk walk every day I insist upon, provided their nausea will permit.

In an analysis of 2341 clinical cases of obstetrics delivered in the obstetrical department of the Medical College of Virginia showed fifty-one cases of eclampsia, 2.2%. Of these fifty-one, seven or 13.7% died. The rather good showing is due to the care that these cases have in the dispensary during their pregnancy. For several years we have refused to attend cases that do not report regularly to the dispensary. Of the twelve deaths from obstetrical causes in the series of 2341 cases, seven died of eclampsia, two of ruptured uterus, two of sepsis and one of pulmonary embolus.

If for no other reason than the detection and prevention of eclampsia and nephritis, which with us caused more than half of our obstetrical deaths, the constant examination of the urine would be the most important single plan of hygiene to carry out. When we consider, however, that urinalysis also gives us a line on the vomiting of pregnancy and shows us a definite method of treatment when we find acetone and diacetic acid, gives us in the indican a hint as to the digestion, gives us the power of

diagnosing that rather obscure condition, pyelitis, provided the urine is catheterized, we must admit that a case of pregnancy cannot be intelligently followed without constant urinalysis. In fighting a pre-eclamptic condition the balance between the nitrogen of the blood and that of the intake and urine is the thing that we depend most upon next to the general condition of the patient.

Pelvimetry should be done upon the pregnant woman the first time she visits the office. Both outlet and inlet should be measured, the promontory should be found by internal examination and the conjugate diagonalis measured. More important, however, than the pelvimetry is to take note of the woman's posture, her walk, the curvatures of her spine, the curve of her sacrum by placing the hand upon it, the width of her pubic arch, the thickness of her symphysis, the mobility of her coccyx, the curviture of her sacrum, and the articulations of the sacral vertebrae, the spines of her ischium; in fact, a good mental impression of the inside of her pelvis. If the case be a borderline one so far as size is concerned get the help of a good X-ray man and study the plates with him. At present our X-ray work upon the pelvis from an obstetrical standpoint is not what it will be shortly when a sufficient amount of careful studies have been made with uniform position, distance of tube, etc.

We will not enter into the methods later in pregnancy of determining the size of the foetus except to say that into the pelvis, pressing it back against the promontory and attempting to get the fingers of the hand between the head and the symphysis has proved the simplest and best to us.

But after all why this desperate attempt to determine the fit of the baby in the pelvis? Can the pelvis be made larger or the baby smaller? Forewarned is forearmed. We can certainly make the pelvis larger in two ways, one so simple that no operation, no assistance is needed. Walchers position will add at least one cm. to the inlet and the exaggerated lithotomy position will add the same to the antero-posterior of the outlet. Pubiotomy will add to the size of the pelvis and is fairly safe in skillful hands. Of course with Caesarian Section we have the means of delivering any size baby with any size pelvis.

Can the size of the baby be influenced?

Prochownik in 1889 advanced the theory that by restriction of carbohydrates and fluids, particularly water, providing 2,000 calories per day for the last six weeks the babies born show all the signs of normal maturity. They are average length, with normal skeletons, all bones showing normal hardness, but there is a deficiency in fat. The skin over the head is thin and slack. This condition of the skin increases the mobility of the skull bones against each other, facilitating moulding and thus permits an unusual degree of compression of the head during labor. In spite of the article by Ehrenfest, "Diet of the Mother During Pregnancy," which appeared in 1919, and "The Nutrition of the Foetus," by Slemons in 1919, the latter being the result of some brilliant studies upon foetal nutrition carried out by him and others at Yale University, I am still of the opinion that the weight of the foetus can be reduced and in certain borderline cases a live baby be the result of properly restricted diet.

Gusserow has shown that only soluble substances pass through the placenta. Slemons conclusions in regard to protein interchange between mothers and foetal blood is that they pass readily through the placenta both ways by diffusion. Glucose of mother supplies the foetus with carbohydrates. Hofbauer and Gage, Mendel and Daniels have shown by injecting Sudan III into pregnant rats that the fat on mother's side of the placenta is stained while the fat on the foetal side is not. This seems to show that fat as such does not pass through the placenta. The fats of the foetus are believed to be manufactured in its body by glucose that also supplies it with carbohydrates.

I have been employing Prochowniks dietary plan for the past few years upon those cases where the pelvis was contracted or where there had been a difficult delivery in previous pregnancy because of a large baby with the following results.

Without restriction of diet where the children came to within a week of the calculated time:

125 males averaged 8 pounds, 5 ounces.

114 females averaged 7 pounds, 12 ounces.

Largest male, 12 pounds.

Smallest male, 4 pounds, 9 ounces.

Largest female, 9 pounds, 14 ounces.

Smallest female, 5 pounds, 4 ounces.

With Prowkonicks diet:

26 males averaged 7 pounds, 5 ounces.

20 females averaged 7 pounds, 4 ounces.

Largest male, 9 pounds, 12 ounces.

Smallest male, 5 pounds, 8 ounces.

Largest female, 9 pounds, 14 ounces.

Smallest female, 5 pounds, 15 ounces.

In the male group without diet there were thirteen operations to aid delivery, eleven forceps and two versions, 10.4 per hundred. In the female group without diet there were ten operations to aid delivery, eight forceps and two Caesarian Sections, 8.7 per hundred. In the male group with Prowkonicks diet there were three operations to aid delivery, three forceps, 11.6 per hundred. In the female group with Prowkonicks diet there were two operations to aid in delivery, two forceps, 10 per hundred.

While the groups are too small to draw any final conclusions, I think we are justified in the continuation of low carbohydrate and water diet in the last six weeks of pregnancy provided there is no contra-indication.

From the examination of the tables I think we are justified in concluding that many babies can be reduced in weight, that the heads of those upon the diet do mould better—note the moulding by the reduction of the S. O. B. diameters of the dieted cases and the lengthening of the O. F. and the O. M. in those cases except the O. M. of the females, where they remained practically the same.

The urine and weight of these dieted cases must be studied very carefully and constantly.

ASSOCIATED NERVOUS MANIFESTATIONS AND PSYCHOSES IN OBSTETRICS.*

By Joseph Bear, M. D., Richmond, Va.

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* Read before the Spartanburg, S. C., meeting of the Tri-State Medical Association, February 16-18, 1921.

Before going into the special details concerning the various nervous manifestations associated with this department, it may be prudent to mention briefly several points of the mental hygiene of pregnancy. It must be well borne in mind that an existing pregnancy with its allied conditions,—parturition and lactation, call forth an extra demand of energy from every cell, from every tissue and from every organ within the body. It diminishes her vitality, debilitates her entire organism and brings about a physiological commotion in the nervous apparatus. This, in turn, brings to bear a strain upon her which is, even under normal conditions attended by emotional irritability, depression and other reflexes. Pregnant women are more impressionable, subject to varying moods, are hyperexcitable, and sometimes a change in their character occurs, a quiet, sweet-tempered person becoming irritable, ill-tempered, low-spirited and even hysterical, or vice versa. A tendency to melancholia occasionally develops, and real psychoses are not uncommon, especially if there is a family taint. These symptoms may be the outcome of a toxemia, which pregnancy greatly invites. In the early months there is a tendency to sleep, especially after meals. Pregnant women frequently complain of a sort of fainting spell. It is accompanied by palpitation or fluttering of the heart, sometimes with pallor, and occasionally by slight loss of consciousness, resembling petit mal. The symptom, though annoying, is not dangerous, unless due to organic cardiac disease. The condition of pregnancy, although a physiological borderline, frequently invites nervous manifestations in varying degree. The mental state of the expectant mother should be preserved as far as possible in a happy, quiet atmosphere filled with contentment, for it is generally known that sudden emotions producing profound shock are detrimental to the maternal organism, and may, in turn, cause an interruption in pregnancy. She should be protected from all horrible, tragic, unpleasant and gruesome sights, from the hearing of accounts of disasters of all kinds,—murders with what the press calls shocking details and railway accidents with realistic descriptions. These are not points of theory, but facts which can be truly applied to

actual cases. Entering superficially on the phase of maternal impressions, it may be said in passing that in women with a psychopathic tendency, who are led to believe in these impressions, may in some instances develop an anxiety psychoses marked by anxiety, restlessness and depression.

The processes of pregnancy make a deep impression on the woman's entire nervous system and more especially on her mental functions. This is especially true in the case of primiparae. The fact is easily understood, for a woman is filled with expectation and anxiety concerning the unknown event, the complete revolution in her organization, the formation of a new being within her uterus. Many reflexes are apt to occur. How many joyful hopes, how many distressing fears, are connected with that which is about to take place, with the act of creation within her bosom; what changeful glimpses into the future, on the one hand the gladness, on the other, the terror, of motherhood; often, also, the anxious doubts as to the probable sex of the newcomer. Consider, too, the stormy sensations experienced by a woman, who, unmarried, has become pregnant contrary to her desires and expectations, especially one in a poverty-stricken condition. Consider the agonizing thoughts in such a case regarding the consequences of giving birth to a child. In these cases there is nearly always a lack of prenatal care, associated, more or less with various nervous manifestations, fears and the like and in addition a marked predisposition to the toxemias of pregnancy. It is only to be expected that in pregnant women in general there will almost always be increased irritability of the nervous system combined with a tendency to a rapid variation of emotional states. Neumann found, in almost all the pregnant women whom he examined, that there was an increase of knee-jerks, as a manifestation of the general increase of nervous tension. Nor does this change depend upon mental influences exclusively; there are other factors, such as the reflex processes aroused by the enlargement of the uterus.

The pathological consequences of pregnancy, as far as they affect the nervous system, take the form of neuralgia and of peripheral neuritis of various nerves, of chorea, of disturbances of the sense organs, and of actual psychoses. As is generally the case, these neuralgias have as a starting point some portion of the nervous system in which a pathological condition is present. The decay of teeth, so often observed during pregnancy accounts for many of the cases of obstinate toothache that annoy and distress these patients. In women who suffer from habitual constipation during pregnancy and in whom the size of the foetus is so great as to cause pressure upon the nerve trunks at the brim of the pelvis, obstinate cramp and sciatic pain may occasion great distress and may seriously affect the patient's general health. Some of the fecal matter upon nerve trunks above the brim nerves so situated that they may be pressed upon in the pelvic cavity. In some of these cases the uterus will be found retroverted, thus preventing proper evacuation of the bowels and adding to the pressure that retained fecal matter excites. In other cases the patients complain of cramp and of sudden spasmodic contraction of the thigh muscles often becoming worse at night. When the disorder is severe, obstinate pain, radiating down the thigh as far as the knee, or even below the knee, is often observed.

Pregnancy favors the occurance of chorea, due of course to the increased irritability of certain nerve centers characteristic of the pregnant woman. This condition usually occurs in primiparae; it is commoner in young than in older pregnant women and seems to make its appearance in the early stages of gestation. In the large percentage of cases it usually disappears before the end of term. If patient grows steadily worse the induction of premature delivery is sometimes followed by excellent results.

Hysteria does not seem to have a marked influence on the course of pregnancy. On the other hand, the hysterical symptoms may flare up and attacks become more frequent and the other nervous disturbances associated with hysteria become more pronounced. The influence of pregnancy in epileptics is likewise variable. Attacks of epilepsy may occur in girls hereditarily predisposed when they reach the age of puberty and reoccur at each successive menstrual period. When such patients marry and give birth, their children

show a marked neuropathic and psychopathic tendency. Another condition which may be closely associated with pregnancy and fortunately of rare occurrence, is tetany. Especially in women, it occurs almost exclusively during pregnancy and the puerperal state. The tetany of pregnancy usually runs a favorable course.

Even in the normal course of gestation one of the usual concomitant features associated with it, namely the morning sickness, often causes great annoyance and distress. If this condition becomes aggravated it may eventuate into a pernicious type and seriously affect the general health of the patient and finally necessitate the evacuation of the uterus. Fortunately, only about one-third (or 33 1/3%) of women are troubled with this reflex vomiting. The real cause is not definitely known; it may be toxic in origin. Primiparae are oftener affected than multipirae. It occurs oftener in the upper classes of society and in those with a neurotic tendency. Along with this the slighter forms of mental disorder consist of perversions of taste and smell.

Of actual psychoses occurring during pregnancy, the commonest forms are melancholia and mania. The former condition, which, according to Ripping, occurs in 84.4% of the cases, is usually very severe and is characterized by a peculiar dreamy condition; it often leads to suicide, or to infanticide immediately after delivery. The psychoses of pregnancy are seen with greater frequency in the second half of gestation, they occur especially in primiparae and are also commoner in unmarried women. The outcome as a rule is unfavorable; sometimes the mental disorder ends with the pregnancy, but in other cases it passes on into the puerperium lasting from six weeks to six months. These psychoses are usually toxic. In women whose nervous systems do not stand the strain of pregnancy well, there will be noted a disordered metabolism. In each case a careful history of the patient should be obtained from some reliable member of the family and also other points relating to the family traits. It has been noted that in these psychoses, hereditary influence plays an important role in about 50% of the cases. In certain neurotic women the existing pregnancy may produce a degree of fright that borders close to mania.

Psychoses of Parturition.—Even during labor acute insanity is sometimes observed in women who are hereditarily predisposed, when the pain is very severe. Ordinarily, the mental condition of the patient during the first stage does not differ from that of a woman suffering pain. In neuropathic subjects it may be marked by hysterical manifestations. In the second stage, towards the end, she may become delirious or even maniacal from the suffering, but, fortunately, this is rare. In a certain number of cases the woman's behavior instead of being cheerful, may be the opposite, the patient stating that she is unable to bear the pain or that she will surely die. Severe cramps in the legs frequently add to the suffering.

Even during labor, one of the most dangerous complications that may befall the pregnant woman is convulsions attended by coma. This, we call eclampsia. During the seizures various nervous phenomena are brought to the surface, the characteristic picture being quite familiar to us all. Between the attacks the patient may be quiet or restless, and sometimes she may become uncontrollable with wild and exhaustive delirium. Frequently these patients have no recollection of what happened. The woman may even deny her child when presented to her. This forgetfulness may extend as far back as a week before the actual attacks began, and occasionally there is a general weakness of mentality for several months following delivery.

The puerperium may likewise be invaded by psychoses of melancholia and mania. In patients who are in a weakened state, exhaustion psychoses may occur after prolonged and difficult labors. In cases of a generally contracted pelvis, or prolonged labor, pressure-paralysis may occur, from the pressure exerted by the child's head upon the intra-pelvic nerves, and above all, on the great sciatic nerve; pressure-paralysis may also result from obstetrical operations, and especially for forceps delivery. The symptoms of pressure-paralysis consist chiefly of paralysis of the extensors of the feet and toes. Puerperal insanity is much more common than the insanity of pregnancy. Years ago it was quite a common complication

but since the standard of asepsis has been raised there seems to have been quite a considerable drop. The first two weeks following delivery seems to be the time for its appearance. After this time it is commonly spoken of as "lactational insanity." Puerperal psychosis does not always have as its cause an infection; it may also be due to an autotoxemia or directly to an unstable nervous system. However, infection, by far, is the most important point in the etiology. In these psychoses, the patients are under great excitement during the first few days, associated with hallucinations. Later the maniacal symptoms disappear and the patient passes into a state of depression, and frequently shows tendencies towards suicide. Puerperal psychoses are not uncommon as a sequel to those cases of eclampsia having had many convulsions, but they usually offer a fairly good prognosis, the majority of the patients recovering within a few weeks. Those following infection are very difficult and resist treatment; from 20% to 40% of the women fail to obtain their normal mental condition. From 5% to 10% of these patients with puerperal insanity die, this being chiefly due to the infection rather than from the mental condition.

In patients who subsequently become pregnant there may be, and frequently there is, a reproduction of the mental picture. Each succeeding attack leaves its mark and the patient should be fully warned not to become pregnant.

Summarizing,—the writer wishes to state that there is no form of psychoses peculiar per se to the child-bearing period, but when it does occur it assumes the clinical type in one or more of the recognized forms. In regard to the frequency of its development, by far the most frequent period, is the puerperium (about 57%); 20% during pregnancy; during lactation about 17% and from 4% to 6% during active labor.

Fortunately, the greater majority of the pregnant cases pass through the various stages untouched by the profound nervous manifestations and actual psychoses, but, nevertheless, we must not lose sight of the fact that the higher we ascend in the scale of civilization, the more complex the tissues become and rendered more susceptible to the various nerve impulses. Civilization, with its artificial dress and customs, has rendered woman a lessened power of resistence; during pregnancy the whole metabolism is changed to meet the new demands on the system and it has been well said that "Gestation tests the integrity of every structure of the body." If there is any latent disease, nervous or otherwise, in the woman, pregnancy will bring it to the surface. This fact warns the accoucheur to study well the constitution of his patient and to observe carefully all weak points in the organism; to guard her from the disorders and complications of pregnancy and from the dangers of excessive and too prolonged suffering.

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CHRONIC LEUKORRHEA.*

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Chronic leukorrhea, under discussion in this paper, is confined to that leukorrhea which has its origin in a diseased endocervix or endometrium, also, I wish to emphasize that, with but few exceptions, chronic leukorrhea is from the endocervix and not from the endometrium, as formerly believed. It may be well to review briefly several important facts about the structure of the cervix and body of the uterus, which are not always sufficiently emphasized. The fundus and cervix may be considered two distinct organs, which differ from each other more or less essentially in their structure and physiologic functions. The mucus membrane of the cervical canal is very different from that of the fundus, in that the glands of the cervical mucosa secrete a true mucous, whereas the endometrium produces a thin secretion, which is not a true mucous. They also differ in the manner in which the same infection may affect them.

As a rule the internal os acts as a barrier in protecting the endometrium against all organisms, except the gonococcus, the tubercle bacillus, and the spermatazoon. If, however, the os be artificially dilated, or if it becomes patent as a result of parturition, infection is possible from any pathogenic germ.

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In the uterus, which is not pregnant, ascending infection in the endometrium and tubes rarely occurs, except from gonorrhea. Just to the reverse is the endocervix, which is more susceptible to infection, as the external os affords less protection and the mucous folds of the cervical mucosa constitute a favorable soil for various organisms, especially gonorrheal infection.

The mucous membrane of the body of the uterus, or endometrium, is a tissue which has been greatly misunderstood. It seems to be peculiarly immune to most bacteria. Quoting Graves—"the destiny of the endometrium is primarily to be the soil for the implantation of the impregnated ovum." Very probable, for this reason Nature provided that it be comparatively immune to the infection and malignant growths common to other membranes.

Not until recent years has the pathology of the endometrium been understood. The older writers made no distinction between the mucous membrane of the fundus of the uterus and that of the cervix, so that diseases were thought to be in the endometrium, which in reality were localized in the endocervix. In fact the endometrium was supposed to be affected in most forms of pelvic disease, and this led to a great deal of local treatment and curetting that was not only not necessary but often harmful.

"Chronic endometritis, independent of infection of adjacent pelvic tissues, almost never occurs as a clinic entity." (Curtis.)

Hitchman and Adler in their work have demonstrated that the amount of endometrium obtained on curettage, depends on the menstrual cycle and has very little relation to the question of infection. The bacteriologic work done by Dr. Curtis, three or four years ago, showed that in a great majority of cases the cavity of the uterus is sterile; that the bacterial invasion is limited to the cervix. This means that curettage is an operation which has been done much too often, that there is almost no indication for curettage of the endometrium, except for diagnostic purposes. The reason why curettage has helped in some cases of uterine leukorrhea, is that the cervix was dilated. Dilatation of the cervix is valuable to improve drainage. However, it must be remembered that the use of the curet in any septic condition of the endometrium is dangerous; it opens new avenues for the spread of the infection to the pelvic peritoneum; the endometrium may be infected just by the passage of unclean instruments past the internal os. It is also possible to cause infection during a curetting operation by carrying organisms from an infected endocervix and implanting them in the endometrium. This is another of the dangers in using the curet.

The term "endometritis" has been too loosely applied to all the changes in the uterine canal. The more recent studies have entirely changed this erroneous conception of the endometrium and it is now known that this membrane plays only a comparatively small part in uterine disease, whereas, endocervicitis is the most prevalent of all gynecological disorders. Fully 85% of all women, single or married, have infected cervices. It is the condition described as "cervical erosion, cervical catarrh, or cervical endometritis," by the older writers, but strange to say, they did not understand the pathology and failed to appreciate the infective origin of the disease. The organisms most commonly found are gonococcus, staphylococcus, streptococcus, and colon bacillus. The two organisms first named, are far the most prevalent.

When chronic endocervicitis exists, there is a persistent irritating leukorrheal discharge, which does not yield to treatment, as a rule. It often has a disastrous effect on the nervous system of the patient; her health becomes impaired far out of proportion to the seriousness of the local infection.

Chronic endocervicitis must be regarded as one of the most important factors in the genital neurosis, which plays such a prominent part in the diseases of women.

What is the treatment? Numerous medications have been used, viz: douches, tampons, germicidal agents, such as iodine, carbolic acid, chl. zinc, etc., without results. Even the curet does not reach and eradicate the deep-seated hypertrophied and infected cervical glands, which are the most important factors in producing the chronic leukorrhea. So far only two methods of treatment can be suggested, which have been tested and found to give re-

sults, viz: the radium and the radical operation devised by Sturmdorf, the technic of which is a complete eneucleation of the entire endocervical mucosa, from external to internal os with preservation of its muscular structure—a cuff of vaginal mucosa from the interior and posterior surface of the cervix having been dissected back is drawn into the denuded cervical cavity and sutured to the internal os, thus relining its entire raw surface with vaginal mucosa.

This operation has been done for a sufficient length of time to form some definite conclusions as to its value. In the first place, it cures the leukorrhea and favors the probability of conception; second, a tracheoplasty of this type does not interfere with normal dilatation during labor; third, it cures the lumbosacral backache, which is such a prominent symptom in chronic endocervicitis.

The application of radium in these cases, the results have been very gratifying, in that the leukorrhea has been cured in most cases; but it is to be remembered that radium is no angel—many injurious effects may occur, viz: artificial menopause, or scanty menstruation, destruction of the ovarian follicles, causing sterility. Not until its therapeutic dose can be measured and intelligently applied to the pathology will it be safe, except in the hands of an expert.

Summary.

To cure chronic endocervicitis, we must remove the entire infected area of the endocervical mucosa. Chronic leukorrhea from the uterus, with but few exceptions, is from the cervical canal and not from the fundus of the uterus.

The curet is a dangerous instrument; often it spreads disease by opening up new avenues for infection. Curettage can never remove all the gland tissue of the cervical mucosa, and wherever the gland tissue remains undisturbed, the infection remains unmolested.

The curet is rapidly becoming obsolete in gynecology. It should be used only for diagnostic purposes and not as a means to cure uterine disease. Its field of usefulness may be narrowed down to curettage for the purpose of removing retained particles of conception. Polypus uteri, small fungus growths within the uterus, to arrest hemorrhage and to obtain tissue for microscopic examination.

ETIOLOGY AND TREATMENT OF RETROVERSION OF THE UTERUS.*

By Stuart Michaux, M. D., Stuart Circle Hospital, Richmond, Va.

The treatment of retroversion should be based entirely upon its etiology. There are but two types: Congenital, and Acquired. Unfortunately, there is very little in the literature concerning the former, and particularly is there a paucity of ideas by the writers and clinicians on the subject of therapeutics. In other words, **how should we treat congenital retroversion** which is producing symptoms? A careful clinical differentiation is necessary for, in spite of the fact that there is a wide divergence in the causative factors, the symptoms may be identical.

A uterus congenitally retroverted will always return to its original position after parturition whether the pelvis is injured or not. It is therefore a fallacy and a cause of the loss of probably 50% of our congenital cases from a statistical standpoint, to pronounce only as congenital those cases that are found in nulliparous women. For this reason, as well as the fact that an entirely different therapeutic procedure is necessary, is it important to establish a constant etiologic factor.

It is now being gradually accepted that the correction of congenital retroversion is orthopedic, while that of the acquired form is gynecological. Approximately 18% (Hirst) of all gynecological cases present a retrodisplaced uterus and since it is certain that congenital retrodisplacement is found in the multipara with superimposed infection and lacerations we will have to rely upon more modern methods than have been relied upon in the past.

Dickenson and Truslow have apparently hit upon the solution by a study of the skeletal poise. In seeking to establish such a factor it is necessary to recognize that the malposition does not

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represent simply a congenital uterine retroversion, but a congenital retroversion of the entire pelvis with resultant compensatory displacement of its contents. Truslow characterizes the poise of these cases as the "gorilla" types in which the "pelvis is rotated backward and downward, the plane of its inlet making with the horizon an angle more acute than that of the normal type." In other words, with normal spinal contours, the axes of the abdominal and pelvic cavities form almost a right angle, while in the stature under consideration there is a marked flattening of the sacro-vertebral angle, resulting in an approximation of these axes toward the vertical, so that the thrust of intra-abdominal pressure is expanded in a more direct line on the pelvic viscera. This flattening of the sacro-vertebral angle is regularly evidenced by a corresponding obliteration of the normal lumbar curve, and the measure of its resultant approximation to the vertical constitutes the diagnostic index in differentiating congenital from acquired retrodisplacements of the uterus.

Sturmdorf has worked out a very satisfactory and simple procedure. The patient, with her back exposed, assumes her natural standing attitude, while the edge of an ordinary 18-inch desk ruler, held vertically in contact with the most prominent spinous processes of the dorsal and sacral convexities, spans the deepest point of the lumbar hollow to the edge of the ruler represents his index of from 12 to 45 millimeters, an excess of 45 mm. indicating pathological lordosis, a condition opposite to the one under consideration. An index of 30 mm. marked the extreme minimum compatible with normal anteversion of the uterus. From 25 mm. down the existence of congenital retroversion may be positively predicted in nearly every case prior to bimanual verification, and this regardless of multiparity and the other complicating factors that obliterate the differentiating factors formulated by Barbour and Watson. (Gulls 3 factors.)

The application of the lumbar index will establish over one-half of all retroversions, complicated and uncomplicated, as congenital, instead of one-fifth as hitherto accepted. The rare exceptions to the rule will reveal on closer study an exostosis of the sacral promontory; a recession of the pubes which foreshortens the conjugate diameter; a strained or deceptive pose assumed by the patient during measurement, or an acquired anteversion from adhesions. It is only reasonable to suppose that, just as a normally poised uterus may be retroverted, so a congenitally retroverted one may become anteverted without invalidating the utility of the index.

It must be emphasized that congenital retroversion is essentially **only** a part of a compensatory adaptation of the **pelvic** contents to abnormal static conditions, through unstable spinal poise: that the depth of the lumbar hollow is the relative measure of the sacro-vertebral angle: that the degree of angulation determines the dip of the pelvis, and that a certain degree of such pelvic dip is essential to the normal topography of its contents.

Under normal development, the erect attitude is attained by flexure of the lumbar spine, the pelvis maintaining an incline of 60 to 65 degrees, the tip of the coccyx being on a level with the lower border of the symphysis pubes. Under abnormal developmental conditions, the upright pose is induced principally by an upward and backward rotation of the pelvis on the hip joints, carrying the axis of its inlet toward a vertical from a horizontal line. In such a vertical pelvis, the only tenable position for the uterus is one of retroposition. The upward and backward rotation of the pelvis elevates the pubes and lowers the sacrum, which latter, thus forming the posterior instead of the upper wall of the pelvic cavity, necessarily alters the mechanism of the sacro uterine ligaments, their horizontal pull tending to hold the uterus backward against the depressed sacrum, instead of suspending it from above, as in the normal. Furthermore, intra-abdominal pressure, inadequately deflected, thrusts the loose intestinal coils into the pelvic cavity and against the anterior surface of the uterus, crowding it into the space of least resistance offered by the sacral hollow.

The whole clinical import of congenital retroversions is centered in their intra and extra-pelvic complications and not in the uterine displacement. The continuous attitudinal strain on the sacro-iliac joints, the erector spinae and iliopsoas muscles, induce pelvic symp-

toms that simulate and are generally attributed to the retroversion.

The one hundred or more operative procedures which have been invented will all of them hold the uterus in the anterior position, but how often there is a failure to relieve the symptoms we are all aware. Since congenital retroversion is a compensatory necessity, it follows that any procedure which converts such a retroversion into an anteversion, converts a compensated into a decompensated visceral equilibrium within the pelvic cavity. Clinically the lumbar index will reveal two classes of congenital retrodisplacements, namely; the complicated and uncomplicated. Leaving the retroversion, or such, unmolested the gynecologist should aim to eradicate all co-existing intrapelvic complications, thus converting the complicated into an uncomplicated case.

It cannot be overemphasized that patients with uncomplicated congenital retroversion suffer through a constant attitudinal strain in maintaining their unstable skeletal poise within the lines of gravity, the congenital retrodisplacement of the uterus being an accompaniment and **not** the cause of the suffering. The treatment should be along mechanical and orthopedic lines.

Briefly, congenital retroposition should not be corrected. Acquired retroversion without prolapse resulting from birth trauma should be repaired and suspended. Acquired retroversion with prolapse requires rebuilding the pelvic fascia in addition to the suspension.

ELEPHANTIASIS AND THE KONDOLEON OPERATION.*

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Elephantiasis and elephantoid conditions are brought about by the mechanical obstruction of the lymphatics or veins of the dependent part added to which is associated the presence of micro-organisms, whether it be a filaria-nocturna or the streptococci. In certain tropical countries the hypertrophy and fibromatosis of the hypoderm is brought about, no doubt, most frequently by the filaria, but in the Gulf and South Atlantic States we find the streptococci the exciting cause. According to Matas[1], the histopathological elements necessary to complete the picture of elephantiasis are:—(1) mechanical obstruction or blockade of the veins and lymphatics of the region, usually an obliterative thrombo-phlebitis, lymphangitis or adenitis; (2) hyperplasia of the collagenous connective tissue of the hypoderm; (3) gradual disappearance of the elastic fibers of the skin; (4) the existence of a coagulable dropsy or hard lypmh edema; and (5) a chronic reticular lymphangitis caused by the secondary and repeated invasion of pathological micro-organisms usually of the streptococcal type. With this viewpoint of its pathology we can lay aside all of the old ideas of tropical types, streptococcal type, etc.

This better understanding of its pathology has led us more nearly than ever to the prospects of curing these unfortunates through the medium of an operation, which has been credited to Kondoleon[2] of Athens, Greece, who first published his method in 1912. The oldest surgical treatment suggested for elephantiasis was that proposed by Carnochan in 1851, which consisted in the ligation of the main artery of the limb, the femoral or external iliac with a view of diminishing the edema. Next came the method of excising wedge-shaped areas by Mikulicz, Von Eiselsberg, Kaposi and others, none of which were, however, satisfactory. The idea of establishing a lymphatic communication between the disease and normal area seems not to have been original with Kondoleon, for in 1908 we find Sampson Handley[3] published his method known as "Lymphangioplasty," which consisted of passing long threads from the diseased area to healthy areas with the hope and expectation of establishing new lymphatic channels along the lines of these silk or linen threads. This has been practiced much throughout the civilized world, not only for elephantiasis, but for other conditions, such as the drainage of internal hydrocephalus suggested by Sharpe[4], and many of the elephantoid conditions. However, Maddon, Ibraham and Ferguson[5], of the Egyptian Government School of Medicine at Cairo, showed very conclusively by their experiment that the force of

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gravity, as well as the fibrous constriction forming about these newly formed lymphatic tubes, defeated their object and ultimately caused them to become fibrous bands. Finally, Handley[6] himself concludes that his procedure was not applicable to elephantiasis in his Hunterian Lecture on the Surgery of the Lymphatic System.

Lanz[7], in 1906, attempted to establish drainage from the edematous area to fascia lata into the deep muscles and extended their operation to the lower limb as well as to the thigh.

Evolving his ideas then evidently from those whose efforts had preceded his, but with the same fixed purpose to establish a lymphatic communication between the healthy infraaponeurotic tissue and the diseased obstruction and hypertrophied supra-aponeurotic tissues, Kondoleon excised a large strip of

Fig. 1—Rosenow's case before operation.

healthy tissue by a long incision through the skin and fascia lata (which acts as a shelf between the superficial and deep lymphatics) by planting pedunculated strips of this fascia lata into trephined openings in the femur. In addition, many smaller openings were made in the fascia lata. Oppel[8] and Rosenow[9] also contributed to this idea of draining by planting flaps of the the fascia lata throughout the diseased area and stitched the edges of the aponeurosis to the underlying muscle with most gratifying results. That scar tissue will form in this gap is obvious, but the newly forming, anastomosing, lymphatics and veins will establish themselves so abundantly and quickly in so large an area that they seem to resist this constricting influence. This he

first reported in 1912 and later in 1915. In 1913 Matas and Gessuer reported this operation, being the first to perform it in America. Later Royster[10], Hill[11], Barber[12], Moschcowitz[13] and Sistrunk[14] reported success with it. Sistrunk's[15] large experience with it in the Mayo clinic has added much to its refinement.

Case.—Mrs. M., presented herself on April 18, 1919, with elephantiasis of the right limb. Was born at Swansboro, Georgia, in 1894, and lived there until 18 years of age, when she moved with her family to Savannah. The swelling of the limb began when she was 17 years old. She was married when she was 15. Had a severe childbirth with pelvic infection and milk-leg at 17. Since then the limb has gradually become larger. During this period of 8 years she has had several attacks of elephantiasis fever, at which time there was an erysipelatous eruption with sudden onset of chill, fever and aching throughout the body. When she was 20 she had a laparotomy done and both tubes removed for a pelvic inflammatory condition. At the age of 21 she was examined for the filaria and she said it was found by one of the interns in one of the Savannah hospitals. A careful study of the blood a few months later was negative, as was also our own investigation. In January, 1918, silk threads were passed from the skin down through the deep fascia and out, numbers of these being inserted as setons from the ankle to the hip with the hope of relieving the lymphadenoma. This was after the method described by Handley in 1908 and which he himself

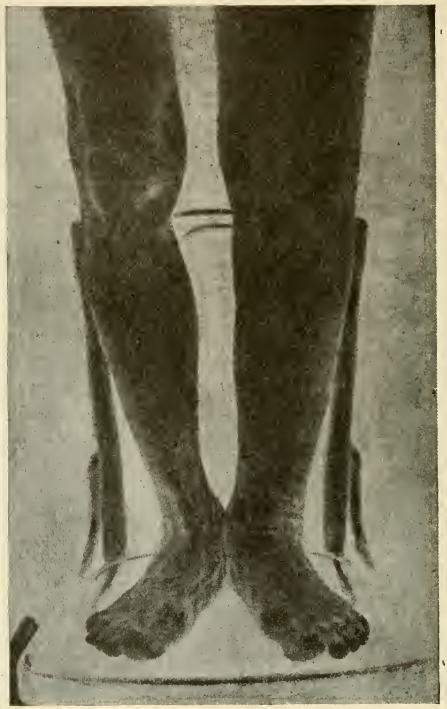

Fig. 2—Rosenow's case after operation.

Fig. 3—Showing amount of skin excised from outer aspect of limb.

has since abandoned. The scars of this procedure can be seen in the photographic plate. It failed absolutely to relieve her.

Family History. She came of normal parents. Father died of valvular heart disease at the age of 56. Mother living and healthy, age 55. Three sisters and three brothers living and healthy. One sister died of childbirth. During childhood she had measles, mumps, chicken-pox and whooping-cough. Vaccinated against small-pox. No hookworm infection. Menstruation established at 13. Suffered dysmenorrhea constantly until birth of the child.

Physical Examination. Stout blond, age 25 years; weight 148; height 5 ft. 4 in. Skin, mucous membrane, nose, throat and reflexes normal. Had Rigg's disease badly several years ago, but apparently cured. Chest and abdomen negative. Extremities, right limb much enlarged. Measurements: Thigh 26 inches; above knee, 22 inches; at the middle of the calf, 20 inches, and the ankle 11 inches.

Blood. Smears for filaria negative (through several night's study). No malaria parasites. Haemoglobin, 85%. Differential count shows: Polys 73%, Lympho 25%, Eosinophiles 2%; W. B. count 13,000; R. B. count 5,000,000. Stool examination negative. Blood Wassermann, negative.

Operation. Under ether anaesthesia, 1 hour and 40 minutes. Two incisions were made from the trochanter major to the external malleolus. (After Kondoleon's method with modification by Sistrunk.) These incisions each began

Fig. 4—Showing amount of skin exrised from inner aspect of limb.

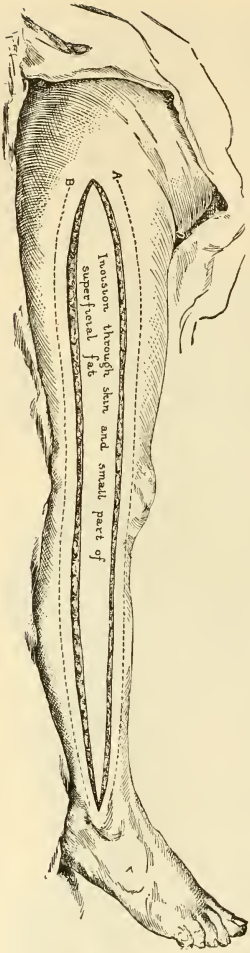

Fig. 5—Incision used on the outer surface of the thigh and leg. Dotted lines A and B show extent to which the skin is reflected for the removal of subcutaneous fat.

at the trochanter and diverged in the thigh until they were a distance of 10 c.m. apart, approaching each other slightly again at the lateral aspect of the knee to a distance of 6 c.m. apart and then diverging again to a distance of 10 c.m. apart at the center of the fore-leg; gradually converging again to meet at the external malleolus (See Figures 3 and 4).

The subcutaneous tissue at the edges of the skin incisions was undercut for a distance of 4 c.m. and the skin flaps held back. When the fascia lata was reached, a strip of it was removed about 6 c.m. wide throughout the entire length of the incision.

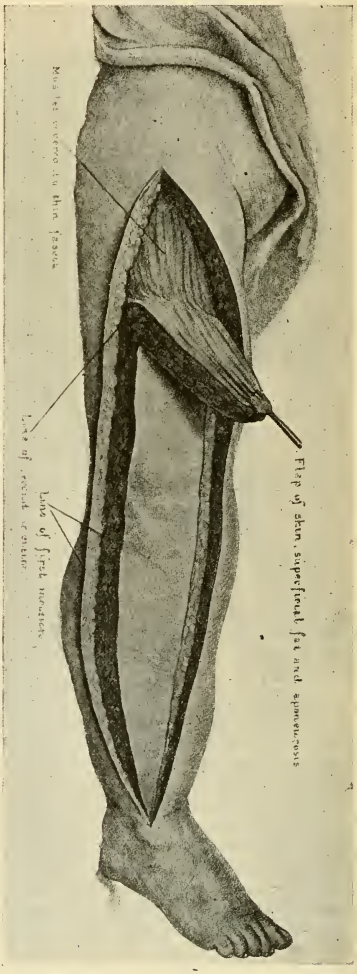

Fig. 6—Skin, a large amount of subcutaneous fat, and aponeurosis removed in one piece.

This mass, consisting of skin, subcutaneous tissue and fascia lata, was removed enbloc. In Kondoleon's original operation, no skin was removed. It is of a great deal of advantage, however, as Sistrunk has shown, to remove about the same amount of skin as one does of the superficial fascia in order that there will be no redundancy of the skin. The skin edges were approximated and sutured after careful haemostasis. A similar flap was removed from the inner aspect of the limb from the trochanter minor to the internal malleolus, except that it was of smaller dimensions. The gross weight of the tissue removed was 6 pounds. Patient showed quite a little shock after operation, but reacted nicely. Both incisions healed by primary union.

Patient, however, was very anemic and developed a double pyelitis and a diarrhoea during her convalescence, which protracted it. The pyelitis was readily relieved by washing the renal pelvis with silver nitrate solution 1%. The diarrhoea was found to be due to gastric anacidity and disappeared under large doses of hydrochloric acid, diluted and taken with each meal. For the first three weeks of her convalescence, 10 c.c. doses of antistreptococcic serum were administered at 3-day intervals. The limb was bandaged daily before arising with an elastic bandage. She was told to continue this for 3 or 4 months after operation. She was discharged on August 5, 1919, in good condition.

Fig. 7—Before Operation.

The change in the appearance of the limb was astonishing within a week after the operation. In that portion of

the limb not reached by the incision the oedema lost its hard, brawny feeling at once and resembled that of an ordinary varicose limb, subsiding very rapidly after the first week to a normal aspect, with very little pitting on pressure. There was oedema, of course, when the patient began to walk about.

Elephantiasis when due to a filaria infection is always due to the presence of the filarial Bancroftii, the embryos of

Fig. 8—Before Operation.

which appear in the blood stream during the sleeping hours, whether one sleeps during the day or night. During the waking hours they seem to congregate in the large vessel in the neighborhood of the lung, the reason for which has never been explained. The mature filaria generally remain in the lymphatic channels or glands. There are about nineteen other different types of filaria. The only other one which is of interest is the filaria loa or diurna, which makes its appearance in the blood stream during the day only, regardless of whether the individual sleeps or is awake. This produces the circumscribed localized swelling of the scrotum, breast, eyelids, tongue, and is known as the calabar swelling. The intermediary host of the filaria Bancroftii is the mosquito, the principal types of which are the Stegomyia pseudo-Scutillaris and the culex fatigans. The intermediary host of the filaria loa or diurna is the mango fly.

Distribution of the filaria Bancroftii is rather diffuse, being largely distributed in India, Africa, South America, and to a certain extent in the southern United States. Charleston, South Carolina, has been known as a hot bed for

elephantiasis. Johnson found that 19% of 400 people examined had filaria embryos in the blood. However, it must be remembered that only about 5% of the individuals showing filaria embryos in the blood ever develop elephantiasis and 90% of these infections are in the lower extremities.

Patients with marked elephantiasis show no filarial embryos in the blood. This leads us to the theory expressed by Matas in his classic, viz., that elephantiasis can be produced by repeated attacks of erysipelas without the presence of the filaria. Wellman, in West Africa; LeDantec, in French Guiana, and Tront, in Sierra Leone and the Congo, found no filaria present in the blood of many cases of elephantiasis, where conditions were most favorable for its presence, especially on account of the nakedness of the natives, this subjecting them more to trauma of the lower extremities and exposing them more to the bite of insects. Low maintained that lymphedema will remain such as long as no secondary infection with streptococci supervenes and that when it does occur the lymphangitis and fibromatosis which results in elephantiasis are due to the death of the filaria embryos and their disorganization. These erysipelatous attacks are referred to as elephantiasis fever and are repeated during the course of the disease, the condition becoming more marked after each. The streptococcus of erysipelas, or Fehleisen, has been isolated from elephantiasis repeatedly. Bancroft claims that 25% of native Fijians with elephantiasis show no filaria in the blood, so the presence of the streptococcus with the

Fig. 9—After Operation.

filaria Bancroftii would seem necessary to bring about the fibromatosis and lymphangitis necessary to produce the condition of elephantiasis.

The improvement of the circulation to the diseased part through the Kondoleon operation will enable us to make better use of remedies directed toward the extermination of embryos and adult filaria. Whether if let alone these people ever develop elephantiasis in other parts, I am unable to determine but, that they are still a source of danger to others through the mosquito, seems reasonable. Salvarsan has been very unsuccessful, but I can find no record of a case having been treated with it after the Kondoleon procedure.

The greatest promise seems to come from the London School of Tropical Medicine where the followers of Sir Patrick Manson, especially that wizard of parasitology Sambon, have found that antimony intravenously has proven so effectual in parasitic diseases. It is considered a specific in kala-azar and, in no less a degree, in schistosomiasis or bilharziasis. In the sleeping sickness, the results have already shown great promise. Why not in elephantiasis after the Kondoleon operation?

Fig. 10—After Operation.

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THE SURGICAL DIET*

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The therapeutic measures in use today are coming more and more to be based upon our knowledge and principles of hygiene, used in the broad sense, both mental and physical, and are based upon known facts, as we see them, of the metabolic activities of the human body. Drug therapy is invaluable in a large number of disease conditions but today we go farther than the mere administration of physic. The use of this or that tonic will avail the patient little in the long run as long as his fundamental manner of living is fallacious. Many individuals do not live right. In their work they frequently waste their energy and in their hours of repose they know not how to rest the fatigued machine.

In the artificial manner of life peculiar to all civilized communities the physician sees day after day innumerable victims of wrong living. Particularly is the modern man apt to abuse hs digestive function. Unbalanced diet, over feeding and irregular habits of eating bring many individuals who would otherwise be healthy, to the physician's office. Proper readjustment of the metabolic functions frequently relieves all symptoms of distress. But the fault is not always and alone with the patient. On many occasions the physician in his attempt to reconstruct the patient's manner of living, gives directions that are inconsistent with latest scientific knowledge. Or again he has often given instructons based upon the prevailing scientific theories, theories which future work proves to be fallacious.

Take for example the routine dietary prescribed in most hospitals, where the patient, suffering from acute disease or following some surgical operation must exist for a time on a light, easily assimilable liquid diet. In this paper we shall discuss particularly the diet used after surgical operations but it applies equally well to the dietary to be used in other disease conditions.

If you will visit a large number of hospitals you will observe that the two articles of diet pre-eminently used in the early after treatment of surgical cases are milk and egg in some form or another. Egg white or the whole egg in its native state is of liquid consistency and advantage is taken of this fact to use it as a principal article of food. The fact that raw egg contains as much protein, fat and carbohydrate as does the same article, cooked, makes it appear equally as good an article of food. Perhaps the chief basis for this use of raw egg is the fact that William Beaumont many years ago observed that raw egg left the stomach more rapidly than did any other article of food ingested. From this he concluded that it was digested more rapidly than any other food substance. Not until many years later was it shown that the white of egg leaves the stomach more rapidly not because of speedy digestion but because it is scarcely digested at all in that organ.

Milk is an excellent article of food. In infancy it not only supports life but it contributes all of the necessary constituents for growth and development. But after surgical operations fresh milk is very prone to produce flatulence and gastric distress. Its use is therefore employed with caution and there is a tendency in post-operative cases to eliminates milk from the dietary. It therefore develops that raw egg in some form or another, usually in the form of egg-nog or albumin water becomes

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the chief article of diet. Theoretically this should be entirely satisfactory and it is true that those cases who do not remain long on the so-called liquid diet exhibit no unpleasant or injurious effects. But it will be worth while for us to examine more in detail the reaction in the human body after the ingestion of raw egg white. The outstanding facts are as follows. Raw egg white has but a feeble ability to stimulate the flow of gastric juice. It is actually no more powerful than a similar amount of water. Cooked egg white on the contrary causes the production of an abundant gastric secretion, and unites rapidly with the hydrochloric acid. The raw untreated substance possesses an anti-body which resists the action of pepsin. Not only is it resistent to digestion in the stomach, but it has also an anti-tryptic action. It calls forth no increased secretion of bile. After having passed the stomach it is but poorly digested in the intestines. Native egg white, when fed with other easily digestable proteins prevents the digestion and absorption of the latter. This has been proven by numerous investigators. Bateman suggests as an explanation that the colloidial egg white absorbs the trypsin, thus diminishing its activity in much the same way as does charcoal.

Administered by mouth, raw egg white produces diarrhoea and sometimes vomiting in dogs. This has been produced by as small an amount as the whites of two eggs. Diarrhoea has also been produced in numerous cases in man, even after as small quantities as the whites of four eggs. Mendal and Louis have shown that after the ingestion of small amounts of native egg white the latter can be recovered unchanged from the stools. In experimental work it made little difference whether the raw food was eaten alone or with other foods. In the latter case diarrhoea was later in appearing. Substances added to the diet which stimulate the flow of gastric juice do not aid in the digestion of egg white. In man from thirty to fifty per cent of egg white is completely lost as such in the feces.

Cooked egg white produces none of these symptoms, and when fed even in large amounts, ninety per cent of it is utilized. It is only necessary to produce coagulation. Coagulation is complete with a resultant jelly like mixture if the temperature is raised to seventy degrees. Heating to a higher temperature and cooking more thoroughly in no way impairs the digestibility.

Experiments on men consisting of the feeding of raw egg white produced as a rule either diarrhoea or flatulence, or both. This sometimes occurred with as small amount as the whites of four eggs daily. The beating of the eggs into a froth made little difference in the result.

Hamburger and Cramer claim that albuminuria follows the ingestion by man of large amounts of beaten egg white. Stokvis believes that raw egg white taken in quantity is absorbed undigested and excreted in the urine, thereby damaging the renal epithelium. Quite recently Van Alatyne has shown that raw egg white taken into the alimentary tract may enter the circulation and be excreted through the urine.

In spite of the foregoing facts one may find on perusal of current books on dietitics that raw egg white is still extensively recommended as an excellent nourishing food for invalids.

We may sum up the case against uncooked egg albumin in saying, first, that it is very poorly digested and absorbed; second, that as high as fifty per cent is lost in the feces; third, that it tends to produce gastro-intestinal upsets, and fourth, that at times it appears to produce an albuminuria, a condition certainly not to be desired in post-operative cases where the kidneys are already overworked, as evidenced by the frequency of albuminuria following general anaesthetization. All of these disadvantages are eliminated by the simple process of coagulation.

Another disadvantage of milk and egg diet, particularly of the egg diet, is that the food substance administered consists chiefly of protein, whereas the preponderating element in the post-operative diet should by choice be carbohydrate. Protein so stimulates the metabolism that the rate of heat formation in the body is accelerated. Sugars and fats have a similar dynamic action but to a much less marked degree. Carbohydrates should be administered to furnish additional energy and to protect the patient's own body protein.

It is nevertheless essential that sufficient protein be administered to repair the waste and loss of protein from the body tissues. Chittendon has shown that with slightly less than one gram of protein per kilogram of body weight, the amino-acid requirements of the tissues will be safely met. The average adult individual weighs about seventy kilograms. With one gram of protein necessary per kilogram of body weight, the daily diet should then contain approximately seventy grams of protein. This will contribute about 280 calories to the daily requirement and we must rely upon carbohydrates and fat for the balance. It makes little difference which of these two latter substances preponderates as long as the fat does not furnish more than ninety per cent of the non-protein calories. In view of the tendency to acidosis in postoperative cases as indicated by the presence of acetone in the urine it would appear more rational to utilize carbohydrates in preference to fats.

To return to the discussion of the protein it is important to note that recent researches have shown that different proteins vary greatly in their ability to maintain nitrogenous equilibrium. This is because certain ones such as those from cereals are deficient in one or more of the essential amino-acids. Van Slyke remarks that a man who might be kept in equilibrium on four grams of nitrogen per day in the form of beef, milk or eggs, would require eight grams as bread or potatoes and sixteen grams as beans. Thus it would appear advisable when we are giving proteins to give those of higher value; meat or meat derivatives, milk, eggs and fish. We must differentiate between proteins of good quality and those of poor quality.

It is not enough that a diet possesses sufficient calories and is composed of the right proportion of foodstuffs. Sufficient vitamines must be present. The food must be palatable. There must be sufficient variation so that the diet will not become irksome. The food must be so prepared that it is easily digested and absorbed.

The physical texture and the fineness of division are factors worthy of consideration. In general, the more finely divided the food, the more rapidly does the digestive juice penetrate and the more rapidly does digestion take place. Indigestable solids not only act as stimulants to peristalsis but apparently actually retard normal absorption. The method of cooking is important. Fried substances are covered by a layer of material which the gastric juice can neither readily dissolve nor penetrate.

If the diet contains a fairly abundant amount of milk and of eggs whose albumin has been coagulated, there is little danger of deficiency in vitamines, either in the fat-soluble A, or the water-soluble B.

Palatability depends first on variation and second on the type of food administered. Only two food substances are naturally appetizing and do not require seasoning. These are animal foods and fruits. The use of fruit juices for increasing palatability is well known. The addition of meat extracts for the same purpose may be employed.

The treatment of operative cases begins before the operation. It is frequently advisable to keep the patient in bed for some days prior to the operation in order to build up the general resistance. A light, highly nourishing diet, relatively rich in carbohydrates may be given up through the day preceding operation.

The importance of a liberal fluid intake before operation cannot be overemphasized. Recent studies in the causation of shock bring out the important role played by the fluid content of the blood. The symptoms of shock are due to a deficient amount of circulating fluid in the blood vessels. In mildly shocked individuals this deficiency follows a draining of blood into abnormally dilated capillary beds, while in severe shock there is added a loss of fluid by transudation out of the vessels into the tissues, due to an abnormal permeability of damaged capillary endothelium. The prevention of shock depends in part at least on the maintenance of a normal blood volume. The practice still occasionally in vogue of withholding fluids for some hours previous to operation results in preliminary dehydration and renders the body less able to combat the shock when it occurs.

Following operation the patient usually receives nothing by mouth during the first twenty-four hours. During this time the stomach is usually upset

and there is a strong tendency to nausea and vomiting. If these symptoms are absent there is no reason for protracted withholding of food. The administration of fairly abundant fluids before operation frequently lessens the tendency to nausea and vomiting. Another precaution which is frequently successful is that of washing out the stomach while the patient is still under the influence of the anesthetic. As soon as the stomach will tolerate ingested material, fluids may be administered. It is best first to try out the patient with water, or with weak tea, or, if stimulation is necessary, strong coffee. Usually by the second day the patient is in condition to take liquid nourishment. Sometimes this occurs sooner.

The accompanying tables are examples of the dietaries in use at St. Elizabeth's Hospital. Diet No. 1 scarcely has sufficient calories to keep the patient's metabolism in equilibrium but is very satisfactory for use for one or two days or even longer if necessary. The protein content would be insufficient for long continued use but the distribution of protein, fat and carbohydrates is much more nearly logical than is found in most post operative diets. This diet corresponds with the usual liquid diet. It, however, does contain such items as oatmeal gruel and a soft cooked egg. In this diet milk is chiefly eliminated and this is the diet used where there is a tendency to distension. On the contrary in diet No. 2 milk is one of the chief articles. It has a higher caloric content and may be used whenever milk is not contra-indicated. Diet No. 3 follows Diet No. 1 or No. 2, whichever has been used previously. Here the caloric content is high and the patient can remain on it contentedly for some time, if necessary. Following Diet No. 3, the usual routine soft and general diets are prescribed.

The advantages of these diets are as follows: first, a graduated increase in feedings is provided for each uncomplicated case; second, the diets are composed of the proper proportions of protein, fat and carbohydrate; third, the nourishing value is high; and fourth, all diets are sufficiently varied and are palatable.

In practical experience we have found the diets to be satisfactory. No striking advantage over the usual method of feeding is to be seen in the average post-operative case. It is particularly in those cases which develop untoward complications with prolonged convalescence that the comparative advantages become apparent. Nevertheless we have

DIET NO. 1

Time		Protein	Fat	Carbohydrate	Calories
7 a. m.	Orangeade, lactose 25 gms.	.4	.1	58.25	235.50
	Sugar 20 gms.				
	Orange 50 c.c.				
	Lemon 25 c.c.				
9 a. m.	Oatmeal gruel 100 gms.	1.2	.4	16.30	73.60
	Sugar 20 gms.	--	--	20.00	80.00
	Cream 75 gms.	1.92	21.00	2.75	207.68
	Coffee 1 cup	--	--	--	--
11 a. m.	Lemonade 150 c.c.	--	--	42.35	169.40
	Or Orangeade 150 c.c.	--	--		
1 p. m.	Broth 100 c.c. with egg 50 gms.	9.55	4.75	1.50	86.95
	Saltines 10 gms.	1.06	1.27	6.85	43.12
3 p. m.	Tea with sugar 10 gms.	--	--	10.00	40.00
	Wafers 10 gms.	1.74	1.72	14.90	82.04
5 p. m.	Chocolate or fruit malted milk 150 c.c.	4.13	4.30	34.01	191.26
	Barley gruel with broth 150 c.c.	4.12	.21	5.14	38.93
7 p. m.	Grape juice 100 c.c. with lemon 25 c.c. and sugar 10 c.c.	--	--	37.45	149.80
9 p. m.	Plain hot malted milk 150 c.c.	4.13	4.30	19.01	131.26
		28.25	38.05	268.51	1529.54

DIET NO. 2

Time		Protein	Fat	Carbohydrate	Calories
7 a. m.	Milk 150 c.c.	4.95	6.00	7.50	103.80
9 a. m.	Juice of ½ orange 50 c.c.	.30	.05	4.25	18.65
	Oatmeal 100 gms. (gruel)	1.20	.40	6.30	33.60
	Cream 75 gms.	1.92	21.00	2.75	207.68
	Sugar 20 gms.	--	--	20.00	80.00
	Coffee 1 cup	--	--	--	--
11 a. m.	Choc. milk 150 c.c., cocoa 5, sugar 10	6.03	7.44	19.30	168.72
1 p. m.	Broth 100 c.c., with egg 50 c.c., cream 50 c.c.	10.65	24.75	3.00	277.35
	Saltines 20 gms.	2.12	2.54	13.70	86.24
3 p. m.	Tea with sugar 10 gms.	--	--	10.00	40.00
	Wafers 20 gms.	1.74	1.72	14.90	82.04
5 p. m.	Cream soup 100 c.c.	7.10	28.43	27.37	393.75
	Soft custard 100 gms.	6.27	6.32	31.35	207.36
7 p. m.	Grape juice 100 c.c., with lemon 25 c.c., sugar 10 gms.	--	--	37.45	149.80
9 p. m.	Hot milk 150 c.c.	4.95	6.00	7.50	103.80
		47.23	104.65	205.37	1952.79

DIET NO. 3

Time		Protein	Fat	Carbohydrate	Calories
7 a. m.	Hot milk 150 c.c.	4.95	6.00	7.50	103.80
9 a. m.	Orange 50 gms.	.30	.05	4.25	18.65
	Farina 100 gms.	11.00	1.40	76.30	371.00
	Cream 75 c.c.	1.92	21.00	2.75	207.68
	Sugar 20 gms.	--	--	20.00	80.00
	1 thin slice of toast with butter, 85 gms.	6.30	9.30	34.90	248.50
	1 cup of coffee	--	--	--	--
11 a. m.	Orangeade or lemonade	.40	.10	58.25	235.50
	Lactose 25 gms.				
	Sugar 20 gms.				
	Orange 50 c.c.				
	Lemon 25 c.c.				
1 p. m.	Poached egg 50 gms.	5.95	4.65	--	65.65
	On Buttered toast 85 gms.	6.30	9.30	34.90	248.50
3 p. m.	Tea with sugar 10 gms.	--	--	10.00	40.00
	Wafers 20 gms.	1.74	1.72	14.90	82.04
5 p. m.	Cream soup 100 c.c.	7.10	28.43	27.37	293.75
	Saltines 20 gms.	2.12	2.54	13.70	86.24
	Canned peaches 100 gms.	.70	.10	10.80	47.00
7 p. m.	Grape juice 100 c.c., with lemon 25 c.c., sugar 10 gms.	--	--	37.45	149.80
9 p. m.	Hot milk 150 c.c.	4.95	6.00	7.50	103.80
		53.73	90.59	360.57	2381.90

observed that patients placed on these dietaries are much more content than others treated by the usual method.

We would particularly emphasize that in post-operative treatment the diet must be individualized. Every patient is a law unto himself. The patient's likes and dislikes should always be consulted and agreeable food substituted for that which is distasteful. This can easily be arranged in our diet. The dietaries above described will be relished by the majority of individuals, but when necessary, substitution should be freely employed provided care is taken not to change the relative proportion of protein, fat and carbohydrate, and not to alter markedly the caloric value.

Original Communications

INTESTINAL OBSTRUCTION.* With Report of Case.

Dr. L. A. Crowell, Lincolnton, N. C.

The intestinal tract which is about twenty-six feet in length is a great eliminative organ and anything interfering with the free passage of its contents, from a slight constipation to a complete intestinal obstruction, proves a menace to the individual in direct proportion to the interference with free intestinal elimination. The cause of death in acute intestinal obstruction is a form of chemical intoxication. The exact toxic agent that produces this intoxication has not been definitely isolated. It has, however, been proven that it is due to a process of protein disintegration. The most distressing form of intestinal obstruction is that following a surgical operation—postoperative intestinal obstruction.

Nothing is so discouraging and disappointing to a surgeon as to have a case of Peritonitis with a quantity of free pus in the peritoneal cavity who has rallied from the shock incident to the operation, on the second to fourth day thereafter develop symptoms of intestinal obstruction. This discouragement and chagrin is multiplied many times when the obstructive symptoms are delayed many weeks after the patient has returned home as in the case I am reporting.

The first symptoms to show in intestinal obstruction are nausea and vomiting coming on after the initial vomiting due to the anesthetic, has passed off; a satisfactory action from the bowels cannot be obtained. The nausea and vomiting increasing as the length of time from their onset increases. This differing from the vomiting of dynamic ileus which diminishes as the length of time from the onset increases. The vomiting is of the overflow type. At the beginning the patient calls for a basin to vomit in but as time passes he just spews it up to fall back into his face.

The vomitus at first consists of the stomach contents stained with bile. Later it becomes very offensive, not a fecal odor, in my opinion, but a more disagreeable and sickening odor than fecal matter. An odor which is hard to explain but once observed is hard to forget. True fecal vomiting may occur just before the end.

Dr. J. B. Murphy said that the doctor who waited for fecal vomiting before making the diagnosis will pass the undertaker on the patient's doorstep.

Pain recurrent and colicky in type accompanied by abdominal tympany associated with visible intestinal peristalsis; the latter can be brought out more clearly by the application of cold water or ice to the abdomen. A failure to demonstrate this symptom is of little value in the late stages of intestinal obstruction since the intestines have become exhausted and no peristalsis is evident.

With the possible exception of acute pancreatitis there is no other intra-abdominal condition which produces such profound collapse as acute intestinal obstruction.

The temperature is as a rule subnormal, especially if the condition has lasted any length of time, pulse rapid, eyes and temples sunken, nostrils thin and drawn, features pinched, lips blue, and skin livid or deadly pale, covered with perspiration and cold. A question that the late Dr. J. B. Murphy always asked these patients, "How are the hands, are they cold?" If so, he considered the prognosis very bad, and my experience with this symptom has proven the truth of this statement.

Leukocytosis is variable and is worth nothing in the diagnosis. Examination of the urine shows it to contain indican which is a result of putrefaction of the proteins and may be an important sign in obscure cases.

The treatment of intestinal obstruction is prophylactic and surgical. Prophylaxis in the treatment of intestinal obstruction is more important than in other branches of medicine and surgery. All acute abdominal conditions should

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be promptly diagnosed and treated surgically, thus avoiding many of the exciting causes of intestinal obstruction.

In doing abdominal operations all tissues and especially the intestines should be handled with the greatest of care and gentleness.

The abdominal viscera should not be brought out of the abdominal cavity if possible to avoid it. If it becomes necessary to remove them from the cavity they should be well protected by towels rung out of warm normal salt solution. Never use a drain in the peritoneal cavity when possible to avoid it and when compelled to use a drain do not use stiff rubber tubes or unprotected gauze drains. Frequently a white serous fluid material is found in cases of acute appendicitis, for instance, where the appendix is not ruptured. This is a protective fluid, is not pus nor is it infectious and I believe we do positive harm by draining such cases. I do not desire entering into the discussion of peritoneal drainage as this is too big a subject for the confines of this paper and has provoked more discussion at medical meetings than any subject that I know of. I do not wish to detract from the subject of the paper by injecting the question of "when to drain and when not to drain." I have never seen a case of postoperative intestinal obstruction in a clean case where drainage was not used. However, I am aware of the fact that there are many conditions that might cause obstruction in a clean case that was not drained.

The essential point in these cases at the beginning, is not treatment—but diagnosis. Once the diagnosis of intestinal obstruction is made, do something, do not wait as every hour of delay increases the mortality markedly.

The reduction of the period between onset and operation is the main factor—we should therefore not be deluded into doing something which will obscure the diagnosis, and unfavorably influence the course of the disease.

Do not use morphine to destroy the symptoms of the disease and to lull the patient and yourself into the idea that he is better. Morphine has been one of the greatest boons to suffering humanity that the medical profession has ever known. On the other hand I know of no remedy which can do more harm than morphia indiscriminately used. This applies not only to acute intestnial obstruction but to all acute abdominal conditions. I would, therefore, urge that morphine be not given at all in any acute abdominal condition until the diagnosis is made.

I know that every one who has done any amount of surgery has procrastinated in these cases hoping that somehow or someway, something would turn up to relieve the obstruction. In my case this line of action has always proven to be vain hope and I have settled the question of what to do in these cases in the future and have decided on immediate action, as soon as the diagnosis is made positive. Since adopting this rule I have saved cases in which I am sure delay would have meant failure. I know of no man who is so unhappy as one who is watching an unoperated case of intestinal obstruction.

In operating for this condition we should make all speed consistent with good work as these patients at best are bad surgical risks. I know of no condition in surgery where good judgment and finished technique are of so much importance.

Stomach lavage should be done on all of these cases before the anesthetic is started, thus avoiding the inconvenience and danger of having a patient vomit while under the anesthetic.

In operating for this condition we should in a general way follow the old surgical aphroism, "open the abdomen and meet the indications." However, there are a few special indications in intestinal obstruction that demand special consideration. For instance in those neglected cases where the patient is very much shocked, abdomen distended, extremities cold, pulse rapid, it is decidedly better to pick up the first loop of intestine which presents itself in the wound and do an enterostomy in the simplest way possible, as the extra time consumed in looking for the cause of the obstruction might jeopardize the life of the patient. This simple procedure has relieved permanently some desperate cases which I have had, but should it not permanently relieve, it always gives temporary benefit and later when the patient's condition is more favorable a second operation can be done to relieve the obstruction.

In this connection I quote verbatim from an article in the Annals of Surgery

of February, 1921, by Shelton Horsley describing a method used by him in doing an enterostomy.

"After delivery of the loop of intestine, intestinal clamps are placed about six inches from each other and the border of the bowel is grasped with mosquito forceps or Allis forceps about two inches from one of the clamps. A similar point is fixed near the other intestinal clamp, and while traction is made on these forceps to make the bowel between them taut, the bowel is incised. This should be done with a sharp knife and should go down to, but not through the mucosa. The incision is two inches long. After separating the peritoneal and muscular coats from the mucosa a purse-string suture of linen is placed at one end of the incision and the mucosa within the grasp of this purse-string suture is punctured. A medium-sized soft rubber catheter, in which there are one or more additional perforations, is quickly inserted through this puncture and the purse-string suture is tied snugly around the catheter. One end of the purse-string suture then transfixes the catheter to hold it in position. The catheter is buried on the exposed mucosa in the incision with a continuous right-angle suture."

This modified technique of puncturing the mucosa rather than incising it along with the peritoneal and muscular coats is evidently a distinct advantage in lessening the probability of a fecal fistula following the operation, and should a fistula follow it would not be so likely to persist for any length of time.

I note in the article by Horsley above referred to that he condemns the threading of the intestine on a glass or rubber tube in doing an enterostomy which was in vogue several years ago. In this opinion I heartily agree as this handling of the intestine could result in nothing but harm. The method has always appeared to me as unsurgical and productive of no good and I have never had the courage to use it but one time and was thoroughly disguested before I completed the procedure.

After the operation is over, I do not think that any one thing contributes so much to the bringing of a patient out from shock more than the continuous application of hot water bottles to the abdomen and I am in the habit of using three or four of them as hot as can be borne continuously from 24 to 48 hours following the operation. They relieve shock, lessen pain and prevent tympany.

I shall make the report of the case as brief as possible, as I am aware of the fact that a long drawn out case report is not always entertaining to the audience.

Ira S., age 14 years, family history negative. Entered hospital May 23, 1919.

Present illness: Began to complain two days previous to entering hospital with colicky pains in epigastric and umbilical region, at the same time passing considerable blood and mucus from the bowels. His bowels had been loose for five days. Blood count: Hb. 75%, Leukocyte 26,000, Diff. P. 85%, Tempt. 103 3/5, pulse 140.

On superficial examination we were inclined to believe this patient had an attack of acute dysentery but after a thorough examination of his abdomen which was very rigid, somewhat tender on pressure and a glance at his blood picture, we decided that he had acute appendicitis,—an appendix which had ruptured.

In considering the diagnosis of abdominal conditions, I look upon muscular rigidity as a symptom of great importance, trouble confined to the intestinal canal does not give rise to a board-like rigidity, and when this latter condition is found it is positive evidence that something is going wrong outside of the abdominal viscera, and a rigidity that does not disappear under anesthesia always points to serious trouble within.

At 2:05 p. m. on day of admission to hospital, a right rectus incision was made and when peritoneum was opened, cecum was found very red, appendix located on innerside of cecum, ruptured near its distal end and considerable amount of fecal matter and pus had escaped. There was no effort on the part of nature to localize the trouble. The appendix was removed in the usual manner and a cigarette drain placed at its stump.

The patient had a rather slow convalescence and left the hospital on June 15, 1919, or twenty-four days after operation. Wound had almost healed and he did well until August 8, 1919, seventy-seven days after operation, when

he developed acute obstructive symptoms. He was brought into hospital on August 9, 1919, with temperature 97, very rapid pulse, periodical attacks of intestinal cramp, vomiting and had a very much distended abdomen. Leukocyte count 10,000. Diagnosis of intestinal obstruction was made.

Patient was taken to the operating room and stomach washed out with normal salt solution before the anesthetic was started. An incision was made on innerside of original incision and when peritoneum was opened, intestines were found very much distended. A superficial search was made for the cause of the obstruction but was not prolonged because of the desperate condition of the patient. His pulse was ranging around 150.

The first loop of intestine which presented itself in the wound was picked up and an enterostomy done. A tube was introduced into gut and a pint or more of fecal matter and gas were drained off. A rubber tube was anchored in the opening in bowel and held in place by two purse-string sutures of catgut in the same manner in which you would do a cholecystotomy.

On August 11, 1919, or two days after operation, patient had several actions from the bowels by the natural route.

On August 19, 1919, or ten days after operation the tube was removed from intestine and bowel contents continued to escape through wound for some time.

A small fistula persisted, discharging a small amount of fecal matter until December 17, 1919, then the actual cautery was applied to tract. After this the fistula completely healed.

Patient did fine and did a regular farm hand's work until September 10, 1920, thirteen months after second operation or fifteen months and two days after his first operation, when he again developed obstructive symptoms. He was admitted to the hospital on September 14, 1920, with pulse 104, temperature 98 3/5.

A number of enemas were given without results and as his symptoms continued to grow worse, on the next day, September 15, a median incision was made and an adhesive band about the size of a lead pencil leading from old scar downward toward pelvis where it was attached to a coil of small intestines, was found and divided. This band had almost completely obstructed the gut near the point of the old incision. In searching for the obstruction, it was necessary to bring several feet of the small intestines out of the peritoneal cavity on to the abdominal wall where they were protected by hot towels. The intestines were very dark in color and very much distended. Before returning them into abdomen we did an enterostomy, draining off a pint or more of fecal matter and a great deal of gas. The gut was then closed with a double line of catgut sutures. An attempt was made to loosen the gut from the anterior abdominal wall at the site of the old incision, at the point where the old fecal fistula existed; the idea being to leave a portion of parietal peritoneum attached to gut.

During the manipulations, however, we inadvertently opened the intestine. It was then entirely freed from the abdominal wall. This left a considerable hole in the intestine which was closed up by three layers of catgut and dropped back into the abdominal cavity.

Patient was put to bed with instructions to give four ounces of normal salt solution by rectum every two hours until three injections had been given; after this the same amount was given every three hours. Hot water bottles were placed on abdomen and kept up continuously for forty-eight hours. The patient immediately began to improve and on the second day following operation had several good actions from the bowels without the use of purgatives which should not be given early. He had an uninterrupted convalescence and left the hospital three weeks following operation, and is in perfect health at this time, and I sincerely hope that I shall never see him as a patient again.

Summary.

1. The importance of an early diagnosis; (b) avoid the use of morphia until the diagnosis is made.

2. The importance of washing out stomach before the anesthetic is started.

3. The intestinal toxemia as a result of the obstruction is the cause of the severe shock, and any treatment which does not deal with this, as well as with the obstruction is incomplete.

4. An enterostomy should be done in every case where the toxemia is well

marked and where there is much intestinal distension.

5. The value of hot water bottles on abdomen in the post-operative treatment.

X-RAY THERAPY AS AN ADJUNCT TO SURGERY.*

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This paper was not written with the idea of bringing out anything which is really new, but to present a brief review of some well grounded facts in regard to this form of therapy as an aid to the surgeon in his routine work of treating disease.

Almost ever since the discovery of the X-ray there has been an upward trend of its use in therapy, but only since the advent of the Coolidge tube with which massive doses can be given has its value in deep therapy gained much prominence.

I do not present the claim that this is a specific remedy for all the conditions to be discussed, but I do believe that it is the most valuable single agent which the surgeon has at his command as an aid to him in the treatment of these conditions.

First, let us consider benign tumors, of which uterine fibroids are the ones which the roentgentherapeutist is most frequently called on to treat, unless we would class hypertrophied tonsils as a benign tumor. In the treatment of fibroids, as in surgery, we have indications and contraindications to the treatment.

First the indications are: All cases in which surgery is contraindicated, as in older women with enemia so far advanced as to be the cause of an anemic heart. All patients of whatever age in which there is organic heart disease, diabetes mellitus, lung disease and goiter with cardiac symptoms, and in the latter the X-ray can be used to great advantage in combatting the symptoms referable to the thyroid.

Treatment is contraindicated in cases in which by resorting to surgery the reproductive function may be retained, cases in whom malignant or gangrenous degeneration has begun and fibroids which are associated with diseased conditions of the adnexa. Also in patients presenting such severe symptoms that there is more danger in waiting three or four months for results, than there is in resorting to surgery. Young women with fibroids should never be treated with the ray unless surgery is contraindicated, if there is any chance of saving the reproductive powers by operation, as the ray, in almost every case, destroys the menstrual function.

Although the action of the ray on the graffian follicle helps to produce a retrogression of the tumor it also has a destructive action on the tumor itself as evidenced by the fact that Beclere and Hanks both report cases in which treatment has been successfully carried out by directing the ray so as to penetrate the tumor and not the ovaries, and in these cases they state that the menstrual function has kept up and the women borne children afterward. All the children being normally developed.

The chief objection filed against this method of treatment is that it may cause the tumor to undergo malignant degeneration, but on thoroughly searching the literature on the subject we have been unable to find report of a single case in which this has occurred. The method of treatment in these cases is to cross fire through the tumor and ovaries, at each treatment covering from three to twelve skin areas, this depending, of course, on the size of the tumor, giving a full skin dose to each area, repeated every four weeks and taking from four to ten series to produce a cure. The number of series depending on the age of the patient and the size of the growth. The older patients make more rapid progress than the younger ones. After the first treatment the bleeding at the subsequent menstrual period may be increased but after this it subsides and the hemorrhage is the first symptom to disappear, followed by a gradual retrogression of the tumor.

The function of internal secretion of the ovaries is not destroyed by the amount of treatment necessary to produce atrophy of the tumor. Hanks makes the statement that in her experience roentgen treatment of these tumors is 100% satisfaction.

Metropathies due to overactivity of the ovaries may be successfully treated, it taking as a rule only a few treatments to correct this trouble.

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Of the diseases of the lymph nodes the one most frequently seen is tuberculosis. In the surgical treatment of this condition we can never be sure that all the diseased glands have been removed, as they may be so located that it is very difficult or quite impossible to remove them and there is usually an unsightly scar produced. In these cases I think the treatment by X-ray is quite a relief to the surgeon, and by this method of treatment, by giving particular attention to technique and regular treatments which are very essential to good results in treating any condition, beautiful results are obtained with no resultant scar. Boggs reports 500 cases with 90% of cures. Our experience has been fully as gratifying as this.

There is some difference of opinion as to technique to be used here. Some prefer massive doses at monthly intervals and others fractional doses at weekly intervals. Personally, I prefer the fractional dose method as I feel that I get better results by its use.

If I may class Hodgkins disease under this heading. It is agreed by all observers that this cannot be cured by roentgen treatment but it can, in some cases, be benefited and the patient kept comfortable and his life prolonged for, sometimes, several months.

As malignancy is the "bete noir" to all of us it seems that we appreciate any method of treatment which helps us with it fully as much as we do in any condition. Almost since the X-ray has been known it has been successfully employed in the treatment of superficial epithelioma but not until a few years ago was it used to any great extent in treating deep-seated malignant conditions. We would not, for one moment, think of treating an operable malignancy by this method and excluding surgery but would advise post-operative raying in all cases of malignancy, by this method endeavoring to destroy any cells which may be left at the site of the lesion and also covering the glands which are likely to be involved. There can be no fixed rule as to how much treatment to give in these cases except to keep it up until there is no danger of recurrence. We often have patients referred to us who have been told by their surgeon that they should have X-ray applied to the scar a certain number of times, but this means nothing to the roentgentherapeutist as his object is to destroy all the cancerous tissue both at the site of the lesion and in the lymph glands, regardless of how long it takes to do this. To do this, it often takes a longer period of time than the laity or even the profession think, and it is sometimes necessary to see the patient on two to four successive days for each series for many months. The interval between treatments is gradually lengthened until we feel that there is no danger of recurrence. It is often necessary to cover quite a number of different skin areas and in some patients nausea of a rather severe nature is produced by too long exposure at one sitting, thus the reason for spreading the series out over several days.

Warnekros reports that of 174 cases of cancer of the uterus operated in the Berlin Clinic, 119 were not treated by the ray and that the deaths in these cases from recurrence was 55.4%, while 55 were systematically rayed and the deaths from recurrence were only 18.5%.

Boggs states that 25% to 50% of recurrences in breast cases are prevented.

These figures may be applied to cancer in any other part of the body. Quick and many other observers strongly advocate pre-operative roentgen treatment of cancer, and by this destroy the growing edge of the lesion and as many as possible of the cells lodged in the lymph nodes and then following the operation with raying as before spoken of.

In inoperable cancer the ray has proven by numerous observers to make it worth while to try this method in all these cases. Even if the condition does not become operable the patient is relieved of a lot of suffering. Radium used in conjunction with the ray is beneficial as it can, in many cases, be applied directly to the lesion and the X-ray applied by cross firing from without. On a recent visit to the Mayo Clinic I was told by Dr. Bowing that they ray all malignancies after operation, and follow them very closely, with gratifying results.

In conclusion: We feel that the ray is the most valuable single agent which the surgeon has at his command as an aid in the treatment of the conditions mentioned.

As to those suffering from cancer, it

is the greatest boon ever brought to them, although like other agents it is not always curative but almost always prolongs life and usefulness and relieves much of the suffering which has heretofore attended this condition.

And lastly, let me emphasize that the treatment of malignant conditions should be started as early as possible after operation.

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THE PREVENTIVE MEASURES OF EAR SURGERY.*

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Probably 75% of surgery is emergency, and done on account of inflammation, and to forestall the evil consequence thereof. This is most assuredly true of ear surgery. The basic principle underlying such surgical treatment is to furnish drainage and ventilation. The beginning of Otitis Media Acute, is almost invariably a state of tubo-tympanic congestion. The swollen tissue lining of the Eustachian tube, interfering with middle ear ventilation, until in many instances the middle ear becomes a closed box; than which a more favorable state for inflammatory microbic action could not be had. It is a loss of valuable time to wait for evidence of a collection of fluid in the middle ear, before doing a paracentesis, once inflammatory state is established. When to all minds familiar with the situation in which certain serious future possibilities present themselves, such as Septic Thrombosis, Brain Abscess, and Meningitis—no possible preventive measures should be neglected. Often an early paracentesis is neglected, because the family physician, and not the Otologist, is called in to treat an ordinary earache, and for which anodynes are administered. Another point of neglect is when the ear opens itself and the drainage thus gotten is considered sufficient. My experience is that these openings are very often insufficient for recovery. Such openings are usually in the lower central quadrant, and do not drain the attic and adjacent anteral infection. Possibly and probably, in such cases a superior posterior membrane incision and vertical superior posterior canal wall incision is necessary. In illustration, I recall a case seen recently, in which a boy, age 14, (a doctor's son) gave history of ear-ache starting three days previously and thereafter soon followed by free discharge, and relief of pain. Evening temperature, however, was 102 to 103. Otoscopic examination showed lower central perforation plenty large, and with free purulent discharge. I decided to wait 24 hours. The next evening revealed the same rise of temperature and just a little higher. Protrusion at the juncture of superior posterior wall and margin of tympanum, was observed, and also a little tit like prominence. apparently containing pus. A free vertical incision at this point was made,(gas anaesthesia being used.) The best of results were gotten, for the temperature dropped to normal and remained so, with an uneventful and satisfactory return to health of the middle ear. This surgical help to nature, though minor in character, was unquestionably the preventive measure to an acute mastoiditis, a general sepsis, or a chronicity of the suppurative process in the middle ear.

The question of secondary or subsequent paracentesis is an important one, also the care of the ear after paracentesis. If the value of the incision is to be gotten, the canal must be kept clean and free of secretion, which tends to thicken and form a detritus, and which blocks drainage and ventilation. I believe the wick drain to be the best method, if properly placed and changed often, but for the average case it is not practicable, and one must rely on syringing by an attendant or nurse, and one only has to examine these ears from day to day to find out how far short this procedure falls in accomplishing its intentions. This should not be held altogether against the nurse or attendant, however, for no one can tell when the

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canal for its entire length is clean, without visual inspection. The burden and the responsibility fall upon the otologist.

As to the secondary and subsequent incision in membrane or wall, each case is a law unto itself. In a general way, a tendency to infiltration and redundancy of tissues, with continued elevation of temperature and possible tenderness over mastoid, indicates the need for repeated incision. I have done so, as many as three times, finally getting complete recovery, then again the same treatment has failed in results. Much depends upon the tissue resistance of the patient, and at times this local surgical help to nature carries the patient along until the time of tissue resistance is reached and recovery takes place.

Before leaving the subject of incision of the Tympanic Membrane or canal wall, I am reminded of some cases in which, in apter phrasing, is to say, "Ear Surgery, (though minor) as a Means of Cure," rather than "Ear Surgery as a Preventive Measure." Such a case I have recently seen—M. D., a female, age 2½ years. History of discharging ears since age of 3 months, had been sick for last two months and had been seen by several physicians and treated for pneumonia and pleurisy, had run a low temperature continuously, had lost weight, and much emaciated at time of my examination; temperature 101, pulse 130, very fretful and restless, especially so at night; had clawed at the head until the hair was worn off entirely in places. The case was referred to me by a surgeon, consulted on account of supposed pleurisy with effusion. X-ray of chest and tapping being negative, it was suggested to the parents that an examination of the head be made. Otoscopic examination revealed a more or less acute condition in both middle ears, though there was a purulent discharge from central perforations. However, the characteristic bulging, sagging tissue at the juncture of tympanum and superior posterior wall was present. Accordingly, advice to incise was given and free incisions were made at the points mentioned. Improvement in the child's condition was immediate. After 2 or 3 days the temperature was normal and the child wanted to play. Phoning me two weeks later the mother says, "The child is well and has no discharge from the ears." This may be an unusual case, but it certainly impresses one with the value of this comparatively minor surgical measure in reversing the trend downward, to that of a return to health. Aprominent surgeon speaking in reference to mental attitude in relation to functional nervous diseases says, "After all, life is what we believe it to be, and happiness is a state of mind, not necessarily a state of body." Yet daily in the surgical world the material act spells miracle.

What are the preventive measures and what the object of the Radical Mastoid Operation?

(1) By removing a suppurative area it removes the patient from the border line danger of intracranial complications.

(2) If successful, it obtains a dry ear, though a non-functioning one.

The radical mastoid operation is a most important preventive measure of ear surgery, but the chronic suppurative ear should never have been, and herein lies the application of the most important of all preventive measures of ear surgery—it deals with the initial Otitis.

When an acute suppurative Otitis Media passes into the subacute stage and tends to remain and become chronic, there is only one proper thing to do, that is, to drain through the Mastoid Antrum, by what may be termed a motified simple Mastoidectomy; that is, going straight into Mastoid Antrum (not removing the uninvolved cells) except sufficiently to give ventilation and drainage to the middle ear, long enough for resolution to take place. This is what I call back door drainage and for anatomical reasons it is the only procedure that drains and ventilates sufficiently for a cure. The peculiar anatomical relation of the Mastoid Antrum to the middle ear is such that drainage is good from middle ear through the antrum, and has the advantage of gravity, with the patient on his back or the affected side, while this is not true of the reverse, that is the attemping drainage of the Mastoid through the middle ear, one has only to examine the bony specimen for his conclusion on this point. Too, we cannot fail to be impressed with how quickly a suppurating middle ear becomes dry, once drainage is established through the Mastoid An-

trum, following Mastoidectomy for acute Mastoiditis. Acute Mastoiditis, like acute Appendicitis, argues operation for itself. However, with a different situation, no acute Mastoiditis and with patient feeling well, naturally there is some hesitatancy on the part of the patient and his family physician in accepting operation. **This is the argument:** It is not a dangerous operation, the patient is usually out in a week, he has a dry ear and in two to three weeks the Mastoid wound is healed. How infinitely better to do this, save the hearing, get a dry ear and transfer the individual from the edge of a precipice to a place of safety. The menace of a rotten spot so close to brain, Meninges, and Venous channel, is one that the modern Otologist cannot afford to be held responsible for. Chronic suppurative ears, Radical Mastoid operation, and dangers of intra-cranial complications from the ear focus, must become things of the past.

In regard to this operative measure for cure of suppurative Otitis Media, there is nothing special to say except as before said, all involved cells of the Mastoid, if any, are of course removed and sufficient of uninvolved bone, especially on a level with, and outward from the vault of the Antrum, as to keep direct drainage and ventilation of the middle ear, sufficiently long for the ear to become dry—on an average say of two weeks.

Just how long one should wait before advising operation depends upon the response gotten to treatment and the corrective measures used—certainly it should be done before the patient gets from under observation with a continuing discharge from the ear; certainly it should be done before bony Necrosis takes place. I have operated with good results as late as six months, and have had chronic ears of years' standing to heal, and perforations close, following Mastoidectomy for acute Mastoiditis. I believe many chronic suppurative Otitis Medias of long standing have little or no Necrosis, and will heal with proper drainage and ventilation. The draft period, of the recent war, revealed an astonishingly large number of chronic suppurating ears—a surprisingly large number got past the examining boards. Personally, many of them were seen by me in the service.

Disregarding the danger to life, you nor I would relish the idea of carrying a discharging ear through life, neither would we care to have a Radical Mastoid. Much that I have said is trite, and common place among us. Yet, is it familiar to, and is its importance felt by others, others whose influence must go far in directing the patient, and in bringing into practice necessary measures of prevention and cure? After his patient gets over the pain and has no fever, is it customary for the average physician to give a thought to the future course of a suppurating ear?

The question might be asked, does the Otologist have a duty in this matter, and is he meeting it?

ON THE EARLY DIAGNOSIS AND TREATMENT OF ACUTE OSTEOMYELITIS IN THE LONG BONES OF CHILDREN.*

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Acute inflammatory disease of the medulla of the long bones is pre-eminently a disease of childhood and early adolescence; a period of transition and vigorous growth not only of the bones but of all body structures. Growth of bone as elsewhere requires abundant blood supply, and Lexer has very conclusively demonstrated the enormous vascularity of the ends of the long bones in children and young adolescents by the injection of a mixture of the emulsion of turpentine and mercury into a large artery of amputated limbs. The mercury finds its way into and completely fills the various arterial trunks, ramifying through the bone, and then by X-ray studies he brought out very clearly the vascular plan of the bone. Lexer has further demonstrated that in adult life there is a most marked change in groups of these arteries, and this is chiefly a gradual diminution in the size with advancing age. In the statistical study of 1058 cases from von Bruns' clinic, it was found that the number of cases of osteomyelitis rises gradually up to the tenth year, is highest at the seventeenth year, and after the seventeenth year there is a rapid fall in the

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number. The greatest number of cases, then, are between the tenth and seventeenth years. In the adult acute osteomyelitis is rare as a primary infection; cases with acute symptoms are really recurrences from an early infection during the adolescent period.

There are few conditions in medicine in which the early recognition and the immediate institution of treatment presents a greater urgency than in acute osteomyelitis of the long bones of children. This at all times is an emergency as dangerous in its possibilities and as potent for harm as perforation of the appendix or stomach. I well recall a clinic in which a well-known surgeon, to emphasize this essential, showed a case of acute appendicitis and acute osteomyelitis simultaneously for purposes of contrast. The patient with appendicitis he could and did allow to wait for subsidence of the acute symptoms, under appropriate care of course; but delay in the case of osteomyelitis was far too hazardous to think of, and was immediately drained. The rapidity and destructiveness of the process in the bone, the possibility of the complete loss of the limb, the danger to life from overwhelming sepsis and toxaemia, and at the best a long and tedious convalescence, with very likely later recurrences, witnessed in the late cases, demand an early drainage of the medullary canal if these possibilities are to be averted. Whether these principles are not generally appreciated, or whether the diagnosis is not made until late, when the disease has progressed to dangerous limits, I am unable to say, but certain it is that the cases I have seen both as an interne, and in practice have, except in very few instances, all been far advanced cases, and often extremely ill. And yet it should not be so, there should be some remedy. Almost simultaneously, I recently saw a leg amputated in a little girl of ten or eleven years, and the death of a boy of thirteen, each following a long untreated, extensive osteomyelitis. When these disasters can be averted, and when diagnosed and treated early enough can be positively cured, by so simple a procedure as drainage of the medulla by removing a small slab of the cortex, every effort should be made to make an early diagnosis, and procure immediate treatment.

By early diagnosis is meant diagnosis within the first 24 to 48 hours, when the infection and suppuration is still sharply localized in the medulla, when there has been very little bone destruction, and before pus has burrowed for any distance through the medullary canal, or broken through the compact bone, separating the periosteum and infiltrating the soft parts. Naturally there are obscure cases where so accurate diagnosis is not possible, but still there are many cases in which the early diagnosis can be made after careful examination. Trauma is often gotten in the history, but sometimes it has preceded so long before the onset of the symptoms as to have been forgotten. Usually trauma has at some time occurred. At any rate with or without the history of trauma, the onset is sudden. There is a chill, a high rise in the temperature, 103 to 104, and pains in the extremity, which are more diffuse than localized. These symptoms should alone direct one to a very careful examination of the extremity, which always reveals an exquisitely tender focus over the shaft of the bone, commonly at the end in the neighborhood of a joint. In the earliest period this is very likely all that can be found, but it is enough and is the opportune time for drainage to secure a short and rapid convalescence, and a complete cure with the simplest sort of operation. It is of great assistance in making a differential diagnosis to know that acute osteomyelitis is almost always a single unilateral process. The pain is referred to one extremity and the tenderness is local. But to add to the complexities, it is not uncommon to find even in the early stages the proximal joint distended with fluid, hot, red and tender. But always the point of maximum tenderness is above or below the joint, and not in it. Tapping over the bone at a point fartherest from the joint in osteomyelitis will cause pain not in the joint but in the area of infection in the bone. There may be redness, increased heat, and swelling in the soft parts overlying the focus in the bone, but the diagnosis should not hang in doubt because these are absent, nor should it remain uncertain because of the reactionary synovitis of the contiguous joint. There are few cases of acute arthritis in children that do not involve multiple articulations. A single syno-

vitis argues against any of these, and all may be excluded by the exact localization of the process outside of the joint.

There are unquestionably cases in which the diagnosis is unusually difficult, and cases that do not conform to the presentation just given. Often does one see a case of very gradual onset, that goes on for a week or more before there are obvious severe symptoms. "Accurate diagnosis in these cases is still beyond us." (Cotton.) It should always be remembered that localized deep bone tenderness with fever, even without severe pain, is presumptively osteomyelitis.

There are also a group of cases which without any previous severe symptoms of an acute illness, first are presented to us with an abscess in the soft parts overlying a bone. In these the perplexity is whether or not to open the bone. This is the question that must inevitably arise,—the question of exploring the bone. "I have made more mistakes by staying out than by going in," adds Cotton. Neither has he ever encountered a case in which infection was introduced into a clean bone by drilling through a drained abscess. Probably the best guide we have in making these decisions is the state of the bone and periosteum after the abscess has been drained. If the periosteum is separated from the bone, if it is infiltrated, or edematous, if the underlying bone is roughened, and eroded, opening of the medulla is positively indicated. But if these changes are not found, if the periosteum is smooth and glistening with its usual healthy lustre, and closely attached to the bone, it is probably best to leave the bone untouched and wait. These cases are usually more often seen in very young children.

Therefore in making the diagnosis of an acute osteomyelitis, at least these three clinical types should be kept in mind. The first type—with a history of trauma, followed by sudden onset with a chill, high fever and intense pain in one extremity, and localized tenderness over the bone near a joint—should not be difficult to recognize. In the second type, the onset is slow and gradual, the patient lies in bed with fever, rarely, if at all, complaining of vague pains or achiness throughout most of the body, suggesting not infrequently typhoid fever. There is no suspicion of osteomyelitis, until there develops swelling of the soft parts and a superficial abscess occurs, and then the case has usually advanced to a late stage. It might be made a rule, especially applicable to young adolescents, that in every case of obscure and typhoid like fever the osseous system of the extremities be carefully examined for tenderness inch by inch, for if there is osteomyelitis bone tenderness will be found, the reason it is missed in these cases is because it is not looked for until the case has progressed to a point where the diagnosis is self-evident. In the third type the patient is most often a young child, and pathologically the focus in the bone is so superficial, and the cortical bone so thin, that the abscess easily and quickly perforates and forms a periosteal or superficial abscess.

To sum up the diagnosis, allow me again to quote Cotton, who has so well put it.

"All tenderness of bone is suspicious. Any bone tenderness with fever is very suspicious, even without pain. Any abscess about a bone is doubtful. Late cases are neglected cases, or misunderstood because of the pathology or other complications."

The X-ray is never of any aid in the diagnosis of the acute cases.

Treatment: The only treatment is drainage of the medullary cavity, which is demanded immediately after the diagnosis is made. Delay incurs greater risk, magnifies the extent of the operation, and diminishes the possibility of a complete cure. Suppuration under pressure within the rigid osseous walls proceeds with a dreadful rapidity. The risk of delay is of an overwhelming toxaemia, and death of the patient, or an extensive destruction of the bone shaft, and possible involvement of the joint. There is nothing simpler when the operation is done early, when the focus in the medulla is small and localized. There are few operations more mutillating than those required for the late cases with extensive involvement. With a limited, localized process, one drainage often insures an absolute cure, and greatly lessens the possibility of a later recurrence. Everyone having any experience with osteomyelitis must have been impressed with the frequency of recurrences of the infection with acute

or subacute or chronic symptoms; also with the large number of cases of persistent or intermittent discharging sinuses. Study of the X-ray pictures, the bone at operations and the history commonly prove the disease in the adult patients to be an old, long continued affair, first inaugurated with an acute infection during adolescence. Pyogenic osteomyelitis in adults is practically always a recurrence, or a continuation of an infection first received in childhood or early youth. My impression is then that if cases of acute osteomyelitis in children and young adolescents are diagnosed and treated early, before the infection has become so widely distributed through the bone, recurrence in the adult, and repeated operations will be materially lessened.

The great indication in acute cases then is drainage, no more and no less. An incision is made over the area of maximum tenderness, exposing the periosteum. If the infection is still confined to the medulla, this membrane is closely applied to the shaft—but may be dull, rubbery and edematous; or pus may be found between the bone and periosteum. In either case the periosteum is incised and stripped back, and a slab of the cortex of the bone removed. Finding the focus in the medulla, enough of the cortex is removed to completely expose and drain this area of infection. If very early no pus may be found in the marrow—the latter being edematous, dull, and infiltrated, but more commonly pus will be recognized. The wound in the soft parts may then be held wide open with a temporary packing, and free drainage allowed to take place. Curettage of the medulla—the so-called cancellous bone, the endosteum, or the marrow—is never indicated, rather contra-indicated. Nichols of Boston was the first to urge against this procedure. The curettage of the marrow destroys the tissue which forms the endosteal bone, and so delays repair. Very much more recently the investigations of Todd still further impress one with the necessity of preserving the cancellous tissue in the treatment of osteomyelitis. In studying the typically healing bone cavity, Todd finds that regeneration occurs largely from the cancellous tissue—that the earliest and strongest growth of granulations is where the cancellous layer is thickest, and from here regeneration continues steadily until the cavity is filled. He also notes that the cut edges of the compact bone limiting the bone opening invariably show little or no tendency to produce new bone. The cancellous tissue is a generous source of osteoblasts, and it is further observed that in cases where the bone has been opened and "so thoroughly curetted" that only the compact shell remained, resulted most disastrously from the point of view of healing. This great importance of the cancellous bone, the marrow or the endosteum, has not been hitherto observed, while the cambium layer of the periosteum has received frequent attention. The conclusion is drawn that cancellous tissue is one of the chief agents in the regeneration of bone, and like the cambium layer of the periosteum, should be treated at operation in the most conservative manner, consistent with thorough exploration and drainage.

Bancroft divides the treatment of acute osteomyelitis into two stages—which he calls the acute and subacute. In the acute stage, the primary indication is the relief of the pus under pressure by adequate drainage. In the treatment of the second or subacute stage, the stage when the acute symptoms have subsided and sequestration has begun, his plan is based on animal experimentation and actual experience with the disease. In those casese where the patient is clinically progressing favorably, bone which by X-ray and gross examination appears dead, may be frequently saved to advantage in order to hasten convalescence and prevent deformity. The sequestrum, he believes, acts much as the bone graft or transplant, encouraging osteogenesis and increasing the rate of repair. He finds new bone is rapidly deposited about the sequestrum,—the sequestrum itself finally becoming absorbed and disappearing. He reports a number of cases and pictures the X-ray plates where this process has occurred.

In summarizing the contents of this article, the features I have tried to emphasize are: First, early diagnosis; second, the urgency of prompt treatment, and third, conservative preservation of the cancellous tissue, the endosteum or marrow.

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THE USE OF LOCAL ANESTHETICS.

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In the discussion of this subject, I do not hope to advance any new ideas, nor report any unusual work or operations done, but rather to make a resume of local anesthetics up to the present.

Much investigation and work has been done in the last twenty-five years with local anesthetics, and especially in the last ten to fifteen. As surgeons realize the work that can be done without producing pain, and without administering a general anesthetic, much more will be done with their use, and in many instances where operations are considered dangerous, serious, or impossible on account of a general anesthetic, many patients will be relieved without any great danger, except from an operative standpoint by the use of a local anesthetic.

It is indeed gratifying to be able to do a great many operations where previously we would not attempt them, and to see the great relief and satisfaction to the patient following the operation done under local anesthesia.

I have not for years, and hope I shall not again use spinal anesthesia. Since a trip to Europe in 1914 and attending clinics there, seeing the results of spinal anesthesia, have felt that I would not be willing for any anesthetic to be injected into my spinal canal, so have felt that I should apply the golden rule. I feel that surgeons have not the right to do for a patient any operation or procedure that they would not allow done to themselves. Few of us would allow our spinal canals injected with any solutions only in a desperate case. Often have I seen our best men refuse to allow any serum injected into the spinal canal. So why should we promiscuously use spinal anesthesia when we have so many safer methods. For my part I would revert to the days before Crawford W. Long lived and made his wonderful discovery and bear the pain.

At Rome, Italy, are two brothers of great repute, Drs. Bastinalli, one of them a surgeon and the other a medical man. I was told by the medical man that the results of his brother's use of spinal anesthesia kept him busy and gave him practically all of the work that he could attend to. He explained that many of the patients following spinal anesthesia suffered with intense headaches, often a temporary blindness; in many cases a loss of sensation of the lower extremities existing for weeks; that he had numerous cases where the sphincter muscles were paralyzed, most of them temporarily; that a great many, men especially, had lost all sexual desires, and that there was a general depression existing anywhere from a few days to a few months. I saw much work done by Werthein and Schauda in Vienna, Coker in Berne, Acht in Munich. The most bad results that I saw and could follow were in the Austrian clinics, some patients went bad on the operating table, and many operations were finished wth a general anesthetic. There are, of course, men over there who condemn the use of spinal anesthetics and who work only with local or general. Dr. Coker of Berne was at that time doing more work with local anesthetics than any man I saw working in Europe, he doing practically all of his goiters, hernias and amputations by this method.

Local anesthesia is not by any means a new procedure, dating back to the beginning of the use of cocain by the French surgeons in 1880. Many agents had been used previous to this with poor success. From 1880 to 1884 cocain was used extensively by European surgeons more as an experiment. From 1887 to 1894 it was used extensively in most of the large clinics of the world, including this country. Most of the work in this country reported up to that time was done by Halsted, Bloodgood, Cushing and others.

Possibly Dr. John Wyeth, and his associate, Dr. Bodine, have done more with local anesthetics, and certainly reported more of their work in hernia than any others I have been able to find record of. In 1917 they reported more than 3,000 cases of hernia alone. They stated that their work had been as successful as with general anesthetics, but more time as a rule was required for the operation.

Previous to 1905 all surgeons who used local anesthetics depended principally upon cocain, eucain and beta eucain. At this time novocain was introduced as being the most ideal of all local anesthetics. Prior to its discovery much danger had attended the use of cocain and its allied drugs, due to its paralyzing or depressing effects on the general nervous system. Cocain had been used in as strong as five per cent solutions. Up to the time novocain was introduced, I had done very little with local anesthetics on account of my fear of cocain, especially where any quantity was used. In those days I was surgeon for a large corporation where there were many injuries to the hands and feet; my greatest efforts were to amputate fingers and toes.

This subject recalls one case where in 1904 I amputated just above the wrist joint, using one-half of one per cent solution cocain. The patient was prostrated for hours afterwards, was pale and gave the general appearance of having fainted. I was much disturbed and faithfully promised myself to not use cocain again.

Since the introduction of novocain my work with local anesthetics has been greatly increased, in many cases preferring this to a general anesthetic, everything considered. There were times during the late war when it was impossible to obtain novocain, during which time I did little with locals, and when forced to operate by this method used a weak solution of cocain not stronger than one-half of one per cent.

In the use of local anesthetics much depends upon the preparation of the solutions. Indeed as much as upon its use. Cocain if used should be prepared fresh each time it is used, or certainly every few days. While novocain solutions keep for weeks. They may be boiled repeatedly and as far as I know, there is no deterioration from long standing. It has been my experience that solutions should always be prepared with normal salt solutions instead of sterile water. Much experimenting has been done by men who use local anesthetics as to the pain produced by the injection of sterile water, normal salt solutions, etc. It has been the consensus of their opinion that the pain is much less with normal salt solution than with sterile water. It is also true that absorption is much more rapid where the solution is prepared with normal salt or isotonic solution. The strength of the solutions used will vary according to the operations to be done and the time to be consumed. It is my custom to use a one or two per cent solution in the skin, one-half to one per cent in the deeper tissues, and where I go into the peritoneum use not stronger than one-fourth of one per cent. I have found the injection of novocain produces very little or no depression. There is usually a slight exhilaration. The patient often becomes talkative, though not nervous or restless. In a few cases the patients have become pale, the pulse smaller and in a few instances weak, and in one case only has there been any alarming condition from the use of novocain, there never has been a mortality from its use in my work. As a rule the quantity of novocain that can be injected in any given operation is practically unlimited, especially where the weaker solutions are used. Attending the clinics at Base Hospital No. 6 by Dr. Babcock, I have seen him use what seemed to me an unbelievable quantity without any bad effects. The solutions that Dr. Babcock used in great quantities were weak, and recalled to me the work done by Gant of New York, many years ago by the injection of normal salt solution. Many of you will re-

call his work, in the rectum especially, with injections of normal salt solutions with no anesthetic except the distention caused by the injection of great quantities of solution. Unless one is an expert anatomist and is thoroughly familiar with pathological anatomy, I would strongly warn against the injection of such great quantities of solutions, as it is easy to be misled by the edematous tissues, especially is this true in hernias and goiters, where in each case the proper recognition of tissues is imperative. In the last few years I have done practically all of the major operations with local anesthesia, and especially is this true in the last four years. Have tried to not become over-enthusiastic in this work, as I feel one who is over-enthusiastic is not as a rule a safe worker, even though in his hands the results may be perfect.

Such operations as the amputation of the arm in the upper and middle thirds, disarticulation at the shoulder joint, amputation below the knee, the upper third of the thigh, in fact any operation upon the extremities have all been done with ease. Have removed the gall bladder in two cases only, but drained it many times. Removed the appendix innumerable times. In a recent case where the heart was seriously involved, was advised by Dr. C. G. Giddings of this city that a general anesthetic he felt would prove fatal, the woman having a bad heart with interstital nephritis, with much odema of the extremities, at the same time operation was imperative, her gall bladder was drained, her appendix removed and operated for hemorrhoids with, as she expressed it, "No more pain than picking a bile." The patient was greatly relieved both from the conditions operated for and her general health. A few cases recently have been operated on for lacerations, both of the cervix and perineum, and numerous cases of hemorrhoids. Without producing any great amount of pain removed the coccyx on three occasions. The last winter especially where I have operated following flu, numerous operations such as removal of the appendix, tubes and ovaries, shortening the round ligaments or suspending the uterus by the Kelly method have been done. On account of age and the general condition of the patients, three gastro-enterostomies have been done. The most major operation attempted with local anesthetic has been a Caesarean section. Patient referred by Drs. J. G. Smith and H. C. Ellis of McDonough. She was five and a half months pregnant when admitted to the sanatorium, had vomited continuously for weeks preceding the time she was sent to the hospital. There was mitral insufficiency with a general odema, especially of the hands, lower extremities and feet. The urine contained blood, great quantities of albumen, numerous casts of all kinds, she was passing from eight to ten ounces of urine in twenty-four hours when admitted. After several weeks it was decided best to attempt to empty the uterus especially that her life was almost despaired of in her last labor with same conditions about two years before, and that a local anesthetic would be the least dangerous to her. She stood the operation well, reacted and in forty-eight hours was passing from twenty-four to thirty-six ounces of urine. In a week, however, following the operation there was practically a complete cessation of urine, she died of uremia. This case impressed me especially as it was possible for me to empty the uterus with a local anesthetic, where with a general anesthetic it seemed prohibitive on account of her general condition. It was deemed unwise by consultants to allow her to attempt to deliver the child herself.

I have found in the use of a local anesthetic that great assistance has been afforded me by the use of a modified twilight sleep. Unless I know there is a contraindication to the use of hyoscin in a given patient I use it. Taking for granted that the operation will be at eight o'clock in the morning, after all of the ordinary preparations have been made the night before, the patient is given at six o'clock (provided the patient is an adult) one-fourth grain of morphin and one-two-hundredths of a grain of hyoscin. At seven-thirty one-eighth of a grain of morphin and from a two-hundredth to a five-hundredth grain of hyoscin. By eight o'clock the patient is quiet, in many instances asleep. Have had a few cases where the patient was hilarious and almost uncontrollable from hyoscin. Have never had one where there was any bad effects from its use other than the hallucination and in a few cases the nerv-

ousness above referred to. With morphin and hyoscin given as above described the patient will often not know for hours that they have been operated upon. While they are conscious at the time of operation and complain of some pain at the primary introduction of the needle, they often do not know that they have left their room. Have many times had them ask me when making rounds after operations, when I would operate. This is practically the same conditions that the patients have following the use of twilight sleep in labor. Have never seen any bad results from the injection of any quantity of solution into the tissues so far as infections or necrosis. In fact in my work infections following the use of local anesthetics are less and trauma is much lessened. It is necessary for one to use much care and gentleness, and to above all things have the complete confidence of the patient. There are many cases where I would not attempt the use of a local anesthetic, especially is this true with nervous patients. I do not as a rule advocate the use of a local anesthetic unless there is some physical condition of the patient where a general anesthetic is contra-indicated, or where the patient prefers a local. Have found in the last few years many cases of men especially, with hernias or hemorrhoids, who would submit to operation with a local anesthetic, who had delayed this for years on account of fear, as they expressed it, of being "put to sleep."

The administration of local anesthetics has been so thoroughly discussed and is as a rule so well understood that a repetition of its administration is unnecessary. I would stress, however, the importance of, as near as possible, blocking all nerves that supply the areas to be operated upon. If the nerve is exposed during dissection, the injection directly into the nerve itself is very satisfactory, or into the tissues surrounding the nerve. When the injection is into the nerve fibers direct, operation can be begun immediately, otherwise give time for the novocain to have effect, five to ten minutes. It is especially important in the use of local anesthetics to produce as little pain as possible in the beginning of the operation as this is the time you gain or lose the confidence of the patient. The skin or part of primary puncture may be anesthetized by painting a small area with carbolic acid, sponging this off freely with alcohol. There is a sufficient anesthesia produced that the primary introduction of the needle is painless and especially after the first wheal is produced. If too much pain is produced primarily, it would in most cases be necessary to give a general anesthetic to complete the operation, as your patient will be so nervous that further work is very unsatisfactory. I recall only one case in the last two years where any aid was needed from a general anesthetic where local was begun, and then only a few whifs of gas, not enough to produce sleep.

With local anesthetics if there is any difficulty in locating a hernial sac it is indeed gratifying to ask the patient to cough. Where operating for goiters if there is a doubt in the operator's mind as to the possibility of the recurrent laryngeal nerve being caught, the patient can be asked a question with very great satisfaction. I have often had the patient given water or ice during the operation or immediately afterwards. Nourishment as a rule can be given any time after the patient is returned to his room. The greatest satisfaction from the patient's standpoint is the absence of nausea and vomiting and the many hallucinations experienced in awakening from a general anesthetic. The impression upon the family and friends is gratifying, they feeling that no matter how serious the operation, the patient upon being returned to the room is in good condition.

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CHARLOTTE, N. C.

"Read not to contradict and confute, nor to believe and take for granted, nor to find talk and discourse, but to weigh and consider."—Francis Bacon.

THE MEDICAL SCHOOL PROBLEM IN NORTH CAROLINA.

A pile of leaves and papers in the back yard has been smouldering and smoking for hours. There is scarcely a flicker of light. Some one comes along and pokes it with a stick and the surrounding night is turned to day with a flare of light almost like an explosion.

So in North Carolina there has been smouldering a need for a finishing medical school. Some one the other day poked it and the whole State has suddenly flared up, realizing its great need for adequately and completely training its own doctors. Almost in the twinkling of an eye this momentous question is being discussed in every quarter.

North Carolina ranks third in the union in its scarcity of doctors per capita and there is no provision for training more, no provision for replacing each year's depleted ranks.

North Carolina is growing in population at the rate of 35,000 per year and thus needs 35 more doctors each year than the year before. But not counting this increase, North Carolina needs each year 100 new doctors to maintain the present ratio.

Perhaps you had not thought of it just that way before. Now where can this supply be found. Really 150 new doctors each and every year in North Carolina. To compel her own sons and daughters to leave the State for the minimum training necessary to make them safe doctors is a disgrace to the State. And not only is it belittling to her pride but it is poor economy and bad business judgment. The sum carried out of the State each year is no small item. Furthermore, it is only a trait of human nature to have confidence in the source of our knowledge and education. At least it is curious to note that almost invariably, "referred" patients are taken or sent by their home doctors to some one of his former professors. Dr. A. sends his to Baltimore while Dr. B., his next door neighbor, sends his to Philadelphia, and if both Dr. A. and Dr. B. were educated in North Carolina, it is very seldom that their patients leave the State. The sum carried out of the State by patients seeking outside, but no better, help is tremendous.

The sum needlessly carried out of the State each year by patients, students and others on various pretexts would handsomely equip and maintain a finishing medical school any one might well be proud of.

Furthermore, such an institution within the State would stimulate the profession to higher standards and more effective practice and would so uplift the entire State that life would be longer, happier and more worth while.

VIRGINIA'S MEDICAL SCHOOL.

Regarding this question, "Southern Medicine and Surgery" has one and only one concern.

If the great State of Virginia is to concentrate all her medical educational efforts in one greater institution then the importance of locating that greater institution where the greatest good will accrue to unborn generations, is so great we scarce can measure it. Those who decide this matter should wear long distances lenses that will extend their vision through the vista of future years and overlook any selfish ambition or personal aggrandizement of the present generation.

We, who live today, shall soon finish the course but the institution if now wisely located will, we believe, live on and on.

Southern Medicine and Surgery has absolutely no interest or concern in the city of Charlottesville or of Richmond as such, but we are concerned most vitally in the best good of the medical profession of the entire State and the South. Our one concern is that Virginia's combined medical school be lo-

cated where it can do the greatest good to the greatest number.

Dr. Barringer argues the point from his honest convictions in a clear and forceful way. Every word he writes is well worth reading. For the sake of posterity let the combined judgment of a democratic people, which judgment must determine the destiny of posterity, be fully enlightened.

We admire the loyalty and patriotism of both the Charlottesville and Richmond forces, but Virginia is bigger than either of these and this is Virginia's question to decide.

The Editor,

Southern Medicine & Surgery.

I have known your journal, and the people behind it, so long that any departure from its old impartial attitude strikes me at once. Your recent editorial on the "University of Virginia Medical School" shows that the rarified rumors and mellifluous mendacities now filling the air have hypnotized your ear to the acceptance of a false note. Let me, as a friend of the University of Virginia, sound another for comparison.

The implication that the history of the Medical Department of the University of Virginia at Charlottesville does not show enough to warrant its continuance there is to make an old-timer laugh. This "little school around the corner" not only ties the great medical school at Harvard in the number of surgeons general furnished the Army, Navy and U. S. P. H. S., and exceeds all others, but in the real work of a University Medical School, life saving research, its record is unapproached. Let me tell the work of three friends, whom I knew, whose work is not generally known.

When Pasteur lifted the curtain for the drama of modern medicine to take the stage, the first generation of medical workers naturally sought the causal organisms of disease. In this work America, young, raw and crude in technique, did not shine. But when the next generation reached the practical task of determining the means of transfer of these causal organisms she came to the front and did her full share. America established the causal relation of the mosquito to yellow-fever, the causal relation of the louse to typhus-fever and the relation of the tick to spotted mountain-fever. It may seem strange to group tick fever with the other two well-known diseases but if we consider the vast variety of hosts affected by the tick and the consequent danger to all rural workers if the present, and seemingly accidental, limits of this fever organism, are once transgressed we can see that the proofs of the potentiality of the tick was a service to mankind second to none.

This original work, these "three pillars of American epidemiology," and the practical results which followed, are the glory of American medicine. Any American institution having a son who contributed anything whatever to this great work places his name high on its roll of honor. The name of Lazear, of Johns Hopkins, who met an accidental death in this work will ever be remembered and is a name especially revered at his alma mater. But it fell to the lot of another medical school, the Medical Department of the University of Virginia, at Charlottesville, to have a son who played a part, and a major part, in all of these three great discoveries.

Dr. Walter Reed, M. D., University of Virginia, 1869, was not only the ranking officer of the U. S. Army Medical Commission which cleared the long mystery of yellow fever but he was its acknowledged intellectual force. Building on the work of McNutt, Finlay and Carter, he saw that yellow-fever, like malaria, had an extrinsic period of incubation and went straight at this side of the problem and won where they had failed. In a like manner no one man can be credited with the discovery of the whole problem of typhus but the work of Dr. John F. Anderson, M. D., University of Virginia, 1896, U. S. P. H. S. on typhus fever in Mexico, (in conjunction with Dr. Goldberg) did more for a solution than the work of any other. Their conjoint report, signed "Anderson and Goldberg," proved the identity of the mild louse borne "Brills Disease" with genuine typhus fever and the way was clear. To the solution of the mystery of the life history of the organism of the "Bitter Root Valley Fever," Dr. Thomas B. McClintic, M. D., of the University of Virginia, 1896, gave the answer, and then gave his life, dying from an accidental bite just after he attained success.

In the language of this direct, but

graceless generation, "Can you beat it?" A medical school amongst the smallest, if not least in numbers, among the older schools of America, having a hand in three such contributions to America's research record. Note also that while all were the ouput of one school they were of different generations as nearly thirty years separated first and last. One thing only they had in common and that was the spirit of high endeavor born of an atmosphere of culture and consecration. There can be no pedagogic prepotency, such as this, in a commercialized atmosphere.

And now as to the mild implication in your editorial that medical students of the University at Charlottesville have had no clinical instruction. It is some twenty years since the faculty of the old "theoretical school," which had trained these "immortals," at Charlottesville, decided to add clinical instruction. Welcome in any city in Virginia, and invited to move, they held back. Long outside of the "clinical field" they had been watching the slow development of its fraudulent aspects. Medical school catalogues were often loaded with "clinical material" which no student ever saw. They determined upon a State Hospital in the very heart of the University, and for its sole use. as the best solution of the problem. It fell to the writer to convince the Board of Visitors, business men, of the feasibility of this conception. The arguments which ultimately convinced them were these:

(1) With the same solicitation and treatment rural and small-town folk will acquire the hospital-habit as easily as city folk.

(2) As Virginia's population is nearly 2,000,000, with less than 10% in her major cities, the rural field offers overwhelming odds.

(3) A proper State Hospital at any good railway center, near the center of the State will be easier to fill than any in a city.

(4) Such a hospital can be made a better teaching plant than if in a city because freer from municipal and political rivalries.

These arguments won because unanswerable. Used in North Carolina, a state of similar conditions, they would win today and free her from a loathsome bondage. In proof of this the University of Virginia Hospital. at Charlottesville, is today, when but half-complete as originally planned, the largest general hospital in the State, "averaging 220 daily patients." The official inspector of the American Medical Association, who gave this rating, puts the two largest hospitals of Richmond. the Memorial and the Virginia Hospitals at 113 and 78, respectively. My personal conviction, (giving me great satisfaction) that the University of Virginia Hospital, at Charlottesville, has more usable, and used, clinical cases passing through it annually than all the hospitals of Richmond combined seems to be the growing conviction of Richmond itself. The desperate efforts Richmond is making to halt this development before she is complete is explicable on no other hypothesis. But she is too late, 67, of the 100 counties in the State now patronize this University Hospital and she still young. No legislative body charged with Virginia's upbuilding will ever destroy it.

The development and earlier construction of the University of Virginia Hospital was the work of my middle life as I have had no connection with it for more than a decade. My chief interest now is that it shall survive as an example to other states as offering a solution of their coming problems. The incomparable system of hard-surfaced roads in North Carolina will make her railroads purely subsidiary sources of transportation. A great State Hospital at Chapel Hill can be maintained at much less cost than one in any of her cities, and this is the main factor. The medical care of the thousands of students soon to be there will require a better staff than unofficial effort can provide. Let the prurient philanthropy of the State once center there and Rochester and Ann Arbor may well look to their laurels. It is the inevitable solution of North Carolina's problem and your journal may well ponder its possibilities. The eye of the medical world is now focussed for research and preventive medicine, it will see nothing else. For this a hospital quiet, isolated and undisturbed by the conflicting interests of practitioners is absolutely essential. Further, every patient in such an institution is worth, for pedagogic purposes, any two elsewhere, as the record of this little school at Charlottesville shows.

I send you the last official report of the University of Virginia Hospital at Charlottesville, for careful inspection. It will bear it. Try and get one from Richmond for comparison. I say "try" for we have long tried in vain.

Paul B. Barringer.

Oct. 29, 1921.

Mental and Nervous

Jas. K. Hall, M. D., Department Editor

In Endocrinology for September, 1921, Dr. Oliver T. Osborne, Professor of Therapeutics in Yale University, contributes a brief article under this title: "A Clinical Study of Unusual Disturbances of the Endocrine Glands."

Dr. Osborne is, by the way, not an infrequent contributor to medical literature. He is the author of Principles of Therapeutics, an exceedingly informative volume about drugs, and he writes every now and then about heart and kidney troubles, and his words carry always the report of observations useful to the clinical man in his daily bedside work. Even when talking about the ductless glands, where the temptation is great to soar away into the theoretical and the unknown, he keeps his feet firm on the ground.

In the article above referred to he tells that he saw in September, 1920, for the first time a woman of 24, who had been married for two years, but had not been pregnant. Her complaint was of pain about the heart when lying on her left side: early in the morning the face was swollen, worse under the eyes. This swelling did not disappear until late in the day. At that time the legs were not swollen though three years previously they were edematous. Constipation was so obstinate as to necessitate a daily enema. Frequent nocturnal urination aggravated a troublesome degree of insomnia; perspiration was so excessive as to necessitate frequent changes of clothing; she was depressed, cried easily and often; her cheeks used to be ruddy, but had become pale; she craved sweets, and could easily eat half a pound of candy.

The paragraph above outlined her condition when she sought of Dr. Osborne medical help. With reference to her developmental history he found out that she was a very large girl, had a large abdomen, and even in girlhood she developed enormous breasts. Menstruation began at the tenth year of age, was irregular, and without pain. When married at 22, she was 5 feet 4 inches and her weight was 165 pounds. A year after marriage her weight had fallen to 103 pounds, and at the time of the examination, that is a year after her weight had dropped to 103 pounds, it had risen to 142 pounds. Her waist line diminshed from 42 to 36 inches. She stated that she had never had any hairs on the body except the eyebrows and on the scalp. About six months after marriage, and coincident with the loss of weight, the hair began to grow, and became normal in distribution. A few years ago she was a blond, gradually the hair became brown. She was never able until recently to smell anything. Mentally she was always normal; full of life, a good student, and she was in fairly good health up to the time of her present illness. He summarized his examination of her in the following manner: Mentality apparently perfect. Contour of face perfect, and so are the eyebrows. Teeth are in excellent condition. Throat normal. Skin soft and normal. Body hair normal. The heart and lungs were apparently in sound condition and the blood pressure and urine were normal. The abdomen was negative. The deep reflexes were normally active. Respiration was somewhat accelerated.

A rather complete family history brought out the fact that her father is very tall and slim, and that her mother is but 4 feet and 6 inches in height but weighs 251 pounds. The patient has two brothers and two sisters living. All of them are large, but in good health. One sister at 31 had white hair. Six brothers and sisters died young, but the causes of their death are not known.

Dr. Osborne thinks the condition probably showed a history of previous subpituitary secretion, and at the time of examination an increased thyroid activity with disturbance of the suprarenal glands. The suprarenal disorder was based on the bladder irritability, profuse perspiration, the almost anaphylactic puffiness, and the sluggishness of the bowels. Hyperthyroidism served as the interpretation of the un-

derlying cause of the sleeplessness, rapid heart action, the craving for sweets, and the profuse perspiration.

Treatment was limited to giving whole suprarenal gland in tablet form. At first a one-grain tablet was given twice a day. Within a week the puffiness had disappeared, the heart action had improved, constipation was relieved, night urination had stopped, sleep was normal, and the perspiration was lessening. Another week of treatment increased the improvement. Treatment was then suspended for a week. Then the old symptoms all returned. When this week without treatment had passed she was given a one-grain tablet of whole suprarenal gland only once a day. Within a few days improvement recurred, even with the return of normal smell, and some time in December, 1920, the medication was permanently suspended. The article was written in June, 1921, and for many months the patient had been in normal health. The craving for sweets had disappeared.

Dr. Osborne thinks the case remarkable for two reasons: first, because of the great improvement from so little medication; second, on account of the apparent great change in the endocrine secretions occurring soon after marriage.

Dr. Beverley R. Tucker, of Richmond, Va., has just issued in reprint-form observation on "Therapeutic Uses of Pituitary Gland Substance"—a paper read by him before the last meeting of the American Therapeutic Society, and published in The Medical Record of August 20, 1921.

He calls attention first to the preponderant influence of pituitary secretion in regulating stature, in bringing about changes incident to adolescence, and in controlling carbohydrate metabolism. The anterior lobe is believed by him to exercise domination over skeletal and genital development, while the posterior lobe controls the chemistry of the carbohydrate changes and makes possible the normal tonicity of unstriped or involuntary muscle fibers. Attention to these differences in function of the two portions of the gland will be helpful to the clinician in interpreting his observations. There may be, however, disorder of the entire gland. X-ray study of the bony home of the pituitary gland will throw light on the probable size of the organ. If the sella turcica be too large it may be assumed that the gland is correspondingly increased in size, and perhaps so in activity; if, however, the sella turcica be unusually small the gland will be not only abnormally small, but probably pressed upon and squeezed, with possible disturbance as well as lessening of function. Amongst the probably hypopituitary states Tucker places acromegaly, certain adolescent mental disorders characterized by inability to concentrate, slovenliness, truant, bizarre behavior. For incipient acromegaly he commends the tentative therapeutic use of the posterior lobe of the gland. The mental condition above referred to is often improved by ingestion of the whole gland.

For several years Tucker has been keenly interested in the possibility of underlying pituitary dysfunction as the cause of certain cases of epilepsy. In this paper he states that of seventeen cases of epilepsy treated by pituitary medication nine of them have been free from convulsions for a period of more than three years. The whole gland was administered in dosage of from 6 to 12 grains daily. Other disturbances listed in this paper as probably originating in disorder of the pituitary function are: obesity, certain headaches, diabetes insipidus, various types of menstrual disturbance, constipation, enuresis, anomalous sex characteristics, dwarfism and gigantism, and abnormal arterial tension. In the following dramatic fashion Tucker speaks of the profound influence of pituitary secretion. "It may deform our features, alter our personality, upset our emotions, blight our mentality, throw us into convulsive seizures, or destine us to be a corpulent and jovial Falstaff or a hairy, aggressive Esau."

Who knows? We may yet have endocrinologic interpretations of standard biographies. Read Tucker; he provokes thought.

What becomes of patients who have been adjudged insane and committed to insane asylums or to other institutions for treatment of the mental disease? The popular opinion still is that few of them ever return home, and that relatively few of this small number are appreciably improved. But Dr. Earl D. Bond, of the medical staff of the department for nervous and mental diseases of

the Pennsylvania Hospital in Philadelphia answers the inquiry in detail and with an unexpected degree of cheerfulness. All who are interested in the diagnosis and the results of treatment of the insane should read in the October number of Archives of Neurology and Psychiatry his paper, "Results in Two Hundred and Fifty-one Cases Five Years After Admission to a Hospital for Mental Diseases."

These cases represent consecutive admissions of patients to the hospital, and each of the patients has been carefully followed up, whether still in the hospital or out in the world. All of these patients were women. Out of this group of insane women 68 recovered completely, and have remained well; 61 patients have been discharged as improved, and the degree of improvement has been such as to enable these women to be self-supporting; 8 others have exhibited marked improvement, but they still remain in the hospital. In 51 cases death resulted, and in 63 there has been practically no improvement in the mental condition. The diagnostic and clearance tables would indicate that cases of dementia praecox seldom recover, but they remain in the hospital until carried away by old age, and thereby become heavy state burdens. The manic-depressives tend to recover mental normality, though many of them die as the result of exhaustion and intercurrent infection. The senile arteriosclerotics die, but a few of them hang on to life for several years, and remain mentally unimproved.

The 251 women gave birth to 286 children, 277 before admission to the hospital and only 9 after their return home. These figures would indicate that after recovery from a mental disease these women recognized the dangers of pregnancy and the unwisdom of their bringing more children into the world.

Those familiar with the behavior of patients having that form of mental disease known as dementia praecox are frequently called upon to offer some theory which might account for the improvement that takes place in the mental condition during a physical illness resulting from infection. On the supposition that the new proteid substances released in the body during systemic infection are responsible for this improvement hope has arisen that the therapeutic introduction into the body of proteid substances might bring about recovery. In response to this theory sodium nucleinate, for instance, and other proteid-containing substances, have been so used. Kraepelin could observe no change of consequence in the mental condition, but other investigators have such use of certain proteids. In the reported apparent improvement from such use of certain proteids. In the American Journal of Psychiatry for July, 1921, in an article entitled "Reaction in Dementia Praecox to the intravenous Administration of Non-Specific Protein," by Theophile Raphael, M. D., and Sherman Gregg, M. D., of Kalamazoo, Michigan, a report is made of the reaction of seven individuals suffering from dementia praecox to the administration of repeated injections into their bodies of a certain proteid substance. Use was made of typhoid vaccine (Parke-Davis). During the first experiment injections were made at an interval of from two to five days until six intravenous injections had been given. After an interval of nineteen days four more injections were likewise given. The initial dosage was 500,000,000 killed bacilli, which was gradually increased to 1,000,000,000. The clinical response was not unlike that noted previously in non-mental cases—for example, malaise, chill, headache, fever, and increase in the white blood cells. Slight differences, it is true, were noticed in the leukocyte response from that observed in non-mental patients. There was uniformly noted an immediate and severe reduction in the total red cell count, in two cases so severe, indeed, as to cause some uneasiness. This reduction in the red cells was in all cases prolonged, lasting from four to eight weeks. There was no apparent disturbance of kidney function.

These two members of the staff of the Kalamazoo State Hospital during these procedures which might be called experiments were unable to observe even temporary improvement in the mental condition of the patients under such tentative therapy.

Dr. G. Frank Lydston, of Chicago, in the Illinois Medical Journal for September, 1921, raises a number of objections to execution of criminals in an article

entitled "Capital Punishment the Parent of Lynching."

In his opinion lynching is a community confession that the law is either inefficient or corrupt or that the community has no respect for law and order. He regards the Mosaic criminal law as out of date. The aim of criminal law should not be the punishment of the individual, but the protection of society, and this end can be accomplished by the safe incarceration of the antisocial individual who commits crimes. Legal execution begets brutality in the community, which not infrequently exhibits itself in lynching when the community concludes that the law may not be carried out. Social revenge, in his opinion, as manifested by legalized executions, is a relic of barbarism which should be abolished. His chief objections to capital punishment are that it is not a deterrent influence against the commission of terrible crimes; that executioners become brutalized; that innocent persons are sometimes put to death as the result of circumstantial evidence or on account of perjured testimony; that the wide-spread feeling against capital punishment makes conviction in a capital case difficult, and that insane individuals are sometimes legally killed as a punishment for the commission of crimes which they were unable to prevent themselves from perpetrating. He intimates that in Kansas and Michigan, states in which death is not legally inflicted crimes of violence have not increased.

Eye, Ear, Nose and Throat

By J. P. Matheson, M. D , Dept. Editor

CLINICAL ASPECTS OF MAXILLARY SINUSITIS.*

When a man who limits his work to a special field attempts to interest men doing general medicine and surgery, it is necessary that he choose a subject that is more or less closely interwoven with the work in which these men are interested. My excuse, therefore, gentlemen for bringing the subject of maxillary sinusitis to your attention this morning is four-fold.

First—Because of the frequency with which patients come, because of some condition that is secondary to a sinus infection.

Second—Because of the marked prevalence of the disease, especially since the influenza epidemic.

Third—Because of its frequent occurrence in children.

Fourth—The frequent failure of tonsillectomy and adenoidectomy in children and adults to relieve the symptoms of which they complain.

There is nothing difficult nor obscure about the diagnosis of sinusitis in the great majority of cases. It is often a task which requires expert skill to pick out the sinus or group of sinuses involved, but I do not intend, at this time, going into the methods by which we arrive at the diagnosis of the particular sinus or group of sinuses.

There are certain observations that should be made by any medical man, and if carefully made, there is no reason why he should not diagnose sinusitis with a reasonable degree of certainty. I have chosen the maxillary sinus for discussion because it is the one most commonly infected. However, the symptoms of infection in the maxillary sinuses are, in a general way, the same as those due to infection of any other sinus.

The clinical picture of an acute infection of the maxillary sinus is usually characteristic. Almost without exception the patient states that his trouble began with a cold in the head a week or so previously, and that he is blowing thick pus from the nose. If the infection is localized on one side, as it usually is in the acute stages, the patient notices that the discharge is more marked from the side of the infection. The patient usually describes his discomfort as a neuralgia. This neuralgia is always sharply limited to the areas of distribution of the fifth nerve. Pain in the upper teeth, the inner part of the orbit and the eye on the same side as the infection is almost regularly complained of. The patient does not complain of headache as in the chronic infection, but of pain. A cold that continues for more than ten days and that is associated with marked discharge from one or both sides of the nose is practically

*Read before the Seventh District Medical Society meeting. Concord, N. C., Oct. 10-11, 1921.

always due to a sinus infection, and the sinus most frequently involved is the maxillary. Another class of patients with which you are all familiar is one that complains first one side of the nose stopping and then the other. He will state that when he wakes in the morning the side on which he was lying is always stopped up. The exciting organism is commonly a hemolytic streptococcus, or the influenza bacillus, frequently other pus producing organisms being present. Many cases are self-limited and may subside within from ten days to six weeks. Summary:

Chronic Sinus Infection.

Headache, frequent colds, so-called nasal catarrhs and constant dripping into the back of the nose, and ofttimes an odor noticeable only by the patient himself, are the outstanding symptoms complained of by people who are suffering from chronic sinus infection. The headache is often characteristic. It is almost regularly described as a dull ache pretty well localized on the affected side. It is rare in my experience for a patient to complain of discomfort over the antrum. It is a referred pain that may be localized deep in the orbit, or at the inner angle of the orbit, but usually in the forehead just over the orbital ridge. I wish to emphasize that headaches due to infection of the maxillary sinuses are always localized in the front part of the head. They are practically always more marked in the morning than in the afternoon. If your patient comes with a headache which is localized in the back part of the head, and it comes on, or is more marked in the afternoon I feel quite sure that the headache has its origin in some disturbance other than the sinus condition. Please let me emphasize again, that headache associated with maxillary sinusitis is more marked in the morning, the patient either getting up with it, or complains of it coming on a short time after arising. It disappears by noon, or becomes less about the time the discharge becomes free. Also frequent colds are perhaps the most common symptom of a chronic sinus infection. The patient frequently states that he is rarely without a cold in the head, and that he catches a cold every time the wind changes. Ruling out chronic infection of adenoids, I would not hesitate to say that such a patient has a sinus infection. The problem for us is to pick out which sinus or group of sinuses is infected, and right here I might say, in parenthesis, that this is not always an easy task, but one which will often call for the use of all of one's diagnostic resources. There are three or more important diagnostic aids, aside from the history and symptoms that one may use. They are:

First—Direct inspection with the nasal speculum, followed by the nasopharyngoscope, looking especially for pus and changes in the mucous membrane about the sinus orifice. Polyps practically always, and especially if located about the sinus orifice, indicate chronic sinus infection. These polyps may often attain a tremendous size so that respiration through one or both sides of the nose is impossible, or they may be so small that their presence may be demonstrated only with the nasopharyngoscope.

The second important diagnostic aid is transillumination. This is a great help when carefully and properly used.

The third important aid is the X-ray. However, it is often only of assistance when used in connection with the other diagnostic steps that I have just mentioned. It can not be used to the exclusion of our other methods of diagnosis, and one who attempts to diagnose a sinus condition upon the X-ray alone is a candidate for many serious and often disastrous blunders.

Please let me emphasize again that the X-ray is indispensable and of great value when used with other diagnostic means and when taken and interpreted by one especially trained in this line of work.

Fourth—Peeler and Shirley nasopharyngoscope.* Having arrived at a diagnosis of maxillary sinusitis by the use of the above mentioned methods, what are some of the things in general that we may expect in association with the sinus infection.

First—We have here a focus of infection that may cause any of the symptoms of focal infection with which you are all familiar. I can not refrain, however, from mentioning a few of these conditions with which we run into al-

* See description of this in October Southern Medicine and Surgery.

most daily contact. The most frequently observed being:

First—Instability of the nervous system.

Second—Digestive disturbances.

(a) Mal nutrition.
(b) Gastric ulcer and erosions.
(c) Various dyspepsias.
(d) Skin disorders.

Third—Secondary anemias.

Fourth—Various forms of infectious arthritis.

Fifth—Pyelitis in children and adults.

Sixth—Acute and chronic ear conditions such as various suppurative conditions and deafness.

Seventh—Various forms of catarrh of the nose and throat.

Eighth — Pharyngitis, Laryngitis, Tracheitis, Bronchitis, and Bronchial Asthma.

The recognition of sinus infection in children is of comparatively recent date. Until a few years ago it was not an uncommon occurrence for me to operate on children with purulent discharge from the nares, suppurative ear conditions, frequent recurrence of ear ache and frequent coughs and colds, expecting these symptoms to disappear after the removal of the tonsils and adenoid. To my surprise this happy result was not always obtained. At this time it was impossible for me to offer a satisfactory explanation of these failures to either the family physician, the patient or myself. I can see now that it was frequently a case of discrediting the operation for removal of tonsils and adenoids. However, with the modern methods of diagnosis at our disposal, and in the light of the past experience, these failures are gradually disappearing. I wish here to call especial attention to a group of these cases that at the time of the operation did not show a sinus infection, but on account of operation too soon following an acute infection and doing the operation improperly or carelessly you soon receive a report that your patient is not only not relieved, but is worse than before the operation was performed.

In connection, gentlemen, I wish to emphasize the importance of a thorough and careful examination of the accessory sinuses before any patient is subjected to any nose or throat operation. Now that the tonsils and adenoid operation has become so popularized and is being done by so many men, I feel that it is important to call attention to the chief cause of many failures. It is a matter of almost daily occurrence for patients who have had their tonsils and adenoids removed to present themselves at our office with the complaint of receiving no relief from the operation and ofttimes making the statement that they are worse than before. A careful examination will almost regularly reveal a suppurative process either in the sinuses or mouth, which if it had been recognized and properly interpreted may have saved the patient a needless operation.

Charlotte, N. C., Oct. 11, 1921.

Orthopaedics

Alonzo Myers, M. D., Department Editor

Treatment of Long Standing Dislocations of the Hip. J. Schoemaker. Surg., Gyn., and Obstet., May, 1921.

Two cases are reported of dorsal hip dislocation of long standing, one of 13 years' duration in a young woman of 23, thought to follow typhoid, and one of 3 months' standing in a man of 61 of traumatic origin. In both cases reduction was effected by manipulation under anaesthetic, using an imitation of Lorenz's method of reducing congenital dislocation of the hip. In the first patient this was preceded by two weeks of extension by a 6-kilogram weight, which lowered the trochanter considerably. A plaster spica was used in the frog position, and it was thought that the head gradually forced its way into the depths of the acetabulum. At the time of operation the head was thought to be left "just over the acetabulum" or "resting on the acetabulum." Dr. Schoemaker thinks that when the X-rays show normal bony outlines, even in a dislocation of long standing, an attempt at manipulative reduction should be made rather than open reduction or transposition. The femoral head must be brought to the entrance of the acetabulum with the limb placed in complete abduction after complete flexion. The young woman had two spicas each of six weeks, with diminishing abduction, the man had a spica for only 15 days. Both walked without a limp after recovery.

Spinal Curves in Growing Children. E. H. Bradford. Boston Med. and Surg. Jour., May 19, 1921.

Spinal curvatures, in most instances, are not to be regarded as a definite disease but as a fault in growth. Treatment is not simply correction of the curves so much as the guidance of growth to a normal standard of carriage of trunk shape. The principles of treatment are that easily tired backs should be properly rested, weak-muscled backs should be strengthened, and stiffened parts of the column should be made as flexible as possible. Many practical suggestions are given as to management of faulty postures in children and mild types of structural scoliosis. Simple types of braces for both antero-posterior and lateral curves are shown. For practical purposes he divides the cases into three groups: Habit curves in healthy backs; weak backs with weak muscles or back tissues; and twisted backs with varying resistance to correcting pressure. Conclusions based on the author's large experience are: Flexible curves without structural changes in healthy patients can be restored to normal under proper guidance; this result can also be expected where some abnormal stiffness is present, though special measures may be required; fixed rotary cases need thorough measure if improvement is to be expected even in young children; it is not difficult to prevent increase of curves in healthy adolescents if carefully treated for a long period.

Mechanical Influences in Sciatica. E. W. Fiske, Pennsylvania Medical Journal, June, 1921.

Inadequacy of its treatment. Undoubtedly the chief reason for the confusion lies in the usual methods of presenting the condition in medical teaching. It is found in textbooks of general medicine and neurology as an entity, but little is made of it in works of surgery. As long as sciatic neuritis is considered a distinct disease and so treated, just so long will the underlying causes of this neuritis be neglected, with obvious failure of relief.

The secondary nature of sciatica is becoming more generally recognized. "Sciatica," as commonly used, does not differentiate between a neuritis and a neuralgia.

In twenty consecutive cases of sciatica which came under the author's observation in the past year, not one has failed to reveal an apparent primary cause in the low back. Three of these cases, representative of the group, are reported in detail.

The diagnosis made in twenty cases was sciatica secondary to sacroiliac strain in 55%, to lumbosacral lesion in 25%, to muscular back strain and myositis in 15%, and to possible bone infection in 10%.

Symptoms, according to percentage, in the twenty cases are reported in detail. Mention is made of possible bone anomaly as revealed by the X-ray in 15%.

The treatment was manipulation followed by fixation in 40%, fixation only in 60%. Of the cases manipulated, recovery occurred in 50%, of the fixation cases in 47% (17).

The author believes that in the majority of cases there is pressure by infiltration about the lumbosacral plexus as it crosses the sacroiliac joint. There may also be a reflex from an affected joint.

While we are still in the dark as to the effects and results of manipulation, the author advocates orthopaedic examination in all cases of sciatica and orthopaedic treatment where such mechanical causes are found.

Diagnosis of Post Typhoid Bone and Joint Disease. P. Emile-Weil. Bull. de la Soc. Med. des Hop. de Paris, April 8, 1921.

Confirming the reports of Dufour and Sicard of the positive value of vaccine-therapy in these cases. Emile-Weil describes his own procedure, emphasizing the following points: (1) Of the various types of organisms, Eberth's bacillus is that chiefly capable of producing bone lesions; (2) before effective vaccine-therapy can be instituted the type must be established; (3) especially must the lesion be distinguished from tuberculous disease; (4) both for establishing the type and for distinguishing typhoid from other chronic bone diseases the agglutination test is reliable, even after considerable lapse of time, or when anti-typhoid inoculation has been given. A

portion of the article is taken up with statements in support of this last point. In discussing this communication, Dufour states that from a practical point a polyvalent vaccine from typhoid and paratyphoid organisms gives excellent results.

State Medicine

L. B. McBrayer, M D., Department Editor

GRADUATE INSTRUCTION IN PATHOLOGY AND BACTERIOLOGY.*

* American Medical Association Bulletin, Vol. 15, No. 1, Jan. 15, 1921. Report of Committee to the 17th Annual Conference of the Council of Medical Education and Hospitals.

The Committee.

Chairman, James Ewing, M. D., Professor of Pathology, Cornell University Medical College, New York.

Secretary, Harry Gideon Wells, M. D., Professor of Pathology, Rush Medical College, University of Chicago, Chicago.

Howard T. Karnsner, M. D., Professor of Pathology and Secretary, Western Reserve University School of Medicine, Cleveland.

Oskar Klotz, M. D., Professor of Pathology, University of Pittsburgh School of Medicine, Pittsburgh.

William Ophuls, M. D., Dean and Professor of Pathology, Leland Stanford Junior University School of Medicine, San Francisco.

Eugene Lindsay Opie, M. D., Professor of Pathology, Washington University School of Medicine, St. Louis.

Harold E. Robertson, M. D., Director of the Department of Pathology and Public Health, University of Minnesota Medical School, Minneapolis.

Aldred Scott Warthin, M. D., Professor of Pathology, University of Michigan Medical School, Ann Arbor.

Louis B. Wilson, M. D., Director of the Mayo Foundation for Medical Education.

The Report.

Read by the Chairman, Dr. Ewing:

In one important respect the problem of postgraduate training of pathologists, as with other laboratory subjects, is radically different from that of practitioners of medicine. The facilities exceed the demand. While much may be done to enlarge the opportunities, and much should be done to increase the efficiency of postgraduate instruction in pathology, one of the main concerns of your committee has been to devise means of attracting more and better men into the field of pathology as a career. In addition to the training of pathologists, we take a lively interest in the welfare of our colleagues in other branches of laboratory science, and feel that special opportunities for the pursuit of pathologic studies, bearing on their particular problems, should be provided for anatomists, biochemists and physiologists. Most urgent, it has appeared to us, is the need of raising the standard of pathologic service throughout the country, particularly in small hospitals and for the isolated practitioner.

Finally there are a number of medical and surgical specialties competence in which, quite as much as in general medicine, depends on a thorough knowledge of special pathology. Facilities for the pursuit of these branches of special pathology should be fully provided and thoroughly systematized.

One part of their assigned task the committee has been unable to meet. Although they know something about bacteriology, they unanimously decline to qualify as mentors of the character or content of postgraduate training in bacteriology. They regret that this decision, which was reached at the outset, could not be communicated to our superiors in time for the appointment of another committee, which we trust will be formed at another occasion.

The Training of Pathologists.

Since pathology is medicine, the training of pathologists, as of practitioners, must be a life work. All that can properly be included in a preliminary course of study is a pursuit, under skillful guidance, of the methods of acquiring information about disease, and this end can best be attained by experience in an active, well-equipped pathologic laboratory.

Since the interpretation of data gathered in the pathologic laboratory is possible only in the light of clinical information, a preliminary clinical training, preferably in a large hospital, or in several special hospitals, will greatly in-

crease the beginner's chances of advancing far in pathology. Not a few pathologists have traveled widely, faced epidemics, and some have lost their lives in the quest for material and experience that might satisfy their ambitions for a broad knowledge of disease. Likewise a solid grounding in the purer medical sciences, anatomy, embryology, bio-chemistry, physiology, and bacteriology, with emphasis according to the particular bent of the student, is essential for one who hopes to be a genuine contributor in the field of pathology. In fact, considerable first hand knowledge in these fields, far more detailed than is required of the practitioner, must be at the disposal of anyone who would fulfill the functions of a pathologist. Since infinite variation is one of the main characteristics of biologic processes, the pathologist must be able to place his own observations in their proper series, and in relation to the work of others, and for this task he must have a wide acquaintance with medical literature. He must read English, French and German, have ready access to a good medical library, and use it freely. He will thereby save himself many false steps, and much unnecessary speculation, and his formed opinions will have proper control. Since writing makes an exact man, and the pathologist is useless if not accurate, he should practice the art of putting into good English the results of his observations and publishing them in journals where they will stand the test of criticism of his colleagues. To cope with these extensive demands the one seeking a career in pathology should have a sound body, a level head, and liberal resources in working hours. He will have a definite advantage if provided with an independent income, while in the beginning he should not be encumbered with a family. Unless he is naturally inclined to intellectual pursuits, and is ready for hard work, close thinking, and long exercise in critical methods, he will probably not attain to the highest standards in his field, and his career may end in disappointment. These personal qualifications are mentioned because we believe that not everyone should take up pathology as a career, but only those who are in some degree adapted to its somewhat exacting demands.

Teaching experience is a valuable influence in the training of a pathologist. It broadens his interests, systematizes his work, reveals defects in his knowledge, and trains him in the use of language and literature, while such service may be the source of a salary which will tide him over lean years. A transfer from one branch of pathology to another, or to a systematic course in bacteriology, would form a desirable variation in the teaching experience. Routine teaching, however, should not consume a substantial part of the young pathologist's time or energy.

The major part of training in pathology is best accomplished in a university hospital laboratory, in which there are numerous necropsies, a constant flow of material of all types, and a full and competent discussion of the problems of disease as they arise in an active general hospital. Here also he may gather profit by frequent visits to the wards, the operating room, and the roentgen-ray department of the hospital, to keep him in touch with the problems of the clinic. In such an environment the chief hazard is that the young pathologist may become submerged in endless routine, may abandon his reading, or may lose interest in every field except the immediately practical, and may find no time to pursue a problem to a finish. On this account there is some advantage in an isolated university laboratory where the worker is not absorbed in many tasks, may select his pursuits, and come into contact with other laboratories, where his conceptions of the scope of pathology and its dependence on other sciences will be broadened. In such an environment he will become interested in the principles of pathology, rather than in the daily delivery of diagnoses on a host of miscellaneous cases. There also the advanced student, whose major interest is in pathology, may pursue minor courses in bacteriology or biochemistry, or other subjects which will enlarge his capacity as a pathologist. Such an environment is more favorable than the hospital laboratory for the pursuit of research, and for the production of an original thesis which may stand as evidence of the student's capacity for independent work.

This general scheme of systematized experience our committee feels would be made more coherent and effective if it were conducted under the official super-

vision of the graduate school of the university. Under such auspices the young pathologist will feel that he is still a student completing his fundamental education. The advantage of this environment has led many pathologists to seek their final education in foreign universities. After a period of three to five years the successful student should be awarded the degree of Ph.D. in pathology. A rigid enforcement of the formal rules governing graduate study is, in the case of pathology, unnecessary and impracticable.

A synopsis of the scheme thus outlined for the training of the higher grade of pathologists may be presented as follows:

Course for Degree Ph.D. in pathology.

Prerequisite—M. D. degree from a good medical school.

One or more years as hospital intern advisable.

Three years' service in a university or hospital laboratory.

Teaching experience, not over 10 hours weekly, for which a salary or fellowship is provided.

Advanced work of practical character, or as instructor, in bacteriology.

Minor courses in biochemistry, embryology, etc.

Reading of literature; case reports.

Production of a thesis.

One of our advisors states his belief that the facilities for postgraduate training of pathologists are adequately provided in American universities. This statement is doubtless correct but our committee holds that these facilities are not as a rule properly used. The young pathologist who enters a laboratory is usually submerged in a flood of routine work of whatever type he happens to meet. Assigned to teaching in pathologic histology, he is not deliberately transferred to bacteriology for his benefit. He is not induced to enlarge his knowledge of embryology or chemistry. With rare exceptions his time is fully occupied in earning a small salary, and the idea of systematic graduate education is often lost sight of entirely. The chief practical reason for this defect is the undermanning of the staffs of hospital laboratories and university departments. The committee believes that if the plan of graduate instruction for young pathologists were adopted by university medical schools, the standard of pathology would be raised, more men would be attracted to the field, and they would be assured wider influence and a better livelihood.

In order to maintain candidates for the degree in pathology over the period of three or more years a system of fellowships is highly desirable, if not essential. Quite a few such fellowships are now available, such as the Hanna Research Fellowship in Pathology at Western Reserve, which pays a graded salary of $1,200 to $1,800 yearly, and the fellowships in pathology at the Mayo Foundation which pays $600, $750 and $1,050 for the first, second and third years, respectively, the Clark Fellowship at Columbia, etc. When it is realized that the proposed degree in pathology can be secured only after ten or twelve years of academic work, it will be seen that these small stipends may well be added to any salary the worker may earn for teaching or in any other legitimate professional pursuit which enlarges his knowledge.

For practical reasons many cannot spend three years in a university laboratory devoting much time to systematic training. They soon pass to other institutions, as teachers, hospital pathologists, and other fields of medical work, or their entire time is from the first occupied in routine work.

For such men the committee can only recommend that they secure as much systematic instruction as possible, and they would urge the heads of departments to encourage their assistants when they first enter pathologic laboratories to plan for some work in related sciences. (Most assistants are allowed to shift for themselves; they are kept year after year at one special task, and no intelligent effort is made to give them a broad general experience in their early years.)

However, the committee does not feel that any university degree may be properly awarded for less than three years of systematic laboratory training. Two years' intensive work in a well-equipped hospital university laboratory we regard as the minimum for anyone who would undertake independent service in pathology.

Owing to the urgent demand for pathologists at the present time, some members of our committee would favor the granting of a degree, A. M. or

M. S., in pathology, as an endorsement for two years of intensive work, but the sentiment in this direction is not very definite.

There is a constant demand from small hospitals and commercial laboratories for men who have a wide acquaintance with the methods of the clinical diagnostic laboratory. The medical schools perform a valuable service in training such men as well as may be, but our committee does not feel that this matter falls within the scope of postgraduate education in pathology.

The matter of awarding the Ph.D. degree in pathology to undergraduates in medicine has revealed a difference of opinion in the committee. The writer and others hold that this degree in pathology should signify not only general competency, but some special fitness in that field, and the ability to accomplish in it independent original work. Believing that pathology is the study of disease, we feel that one is not qualified for advanced work in a field with which he has not even as much familiarity as is required in the course for the M. D. degree. A medical student may work at problems in pathology, but he does not thereby qualify as a pathologist, much less as a specially competent pathologist and he would utterly fail to meet the questions which a committee of the graduate school should ask him to test his general knowledge of pathology. Likewise a biologist or a biochemist may work in pathologic problems for three years, using the methods at his command, and he may deserve the degree of Ph. D., but the degree should be in biology or biochemistry and not in pathology.

Special Courses in Pathology for Pathologists.

University laboratories should provide special courses in subjects in which the school is particularly well equipped, for pathologists desiring additional training. These courses may include experimental pathology, medico-legal pathology, autopsy technics, surgical pathology, tumor diagnosis, tropical diseases, serology, clinical microscopy and chemistry. Comparatively few American pathologists have failed to spend one or more periods in pursuit of such courses in European laboratories. Since such opportunities are now restricted, it is desirable that the capacity of American laboratories to give advanced courses to pathologists should be developed to the highest degree. These courses would be most accessible if located in vacation periods. The extent of the course should be made to accommodate the applicant. The committee feels that the interests of pathology would be greatly advanced by the maintenance of such courses, and by establishing the habit among young pathologists of visiting other institutions to learn what their colleagues are doing.

Special Courses in the Pathology of Clinical Specialties for Clinicians.

University laboratories should collect museum and other teaching material in the pathology of all specialties, and should be the custodian of the same.

The conduct of these courses should be under the direction of the professor of pathology, but it is only rarely that the general pathologist is broadly enough equipped to give detailed instruction in all the highly specialized divisions of his subject. A university department of pathology rarely has a sufficient staff to conduct such courses. It is therefore desirable that the work in the pathology of the specialties should only be supervised by the general pathologist with a view to maintaining in these courses a proper perspective in relation to general pathology. In every school in which graduate courses in the specialties are contemplated, there should be in the special staff a teacher particularly well qualified to teach the special pathology of his subject. This demand could be met if no university advancement in clinical specialties were given to anyone who had not qualified or conducted a course in the pathology of his subject.

From the inspection of many of the postgraduate courses in the clinical specialties now being given in this country, we feel that they are generally of a high order from the clinical side, but that the deficient training of the average student in general pathology often renders the pathologic work rather superficial.

The Supply of Hospital Pathologists.

The committee believes that the present standard of pathologic service in the great majority of hospitals is exceedingly low, and they feel that this condition has seriously affected the welfare

of patients and lowered the efficiency of hospital practice to the danger point. That this situation is clearly recognized by clinicians, especially since the revelations of the war, is also apparent from the insistent calls for hospital pathologists that cannot possibly be met. There is little doubt that this dilemma has been reached mainly because of the misconceptions of the clinical staffs of hospitals, and of some medical schools, regarding the functions of a pathologist.

With the rapid multiplication of laboratory diagnostic tests and laboratory methods of observation, the function of diagnosis has, in spite of assertions to the contrary, passed largely to the laboratory man. While everyone acknowledges that the Wassermann test is only an aid, practically speaking, the diagnosis of syphilis is made today by the laboratory technician on the Wassermann test. The roentgen-ray fluoroscope replaces physical diagnosis, and even the staining of the sputum, while the chemist tells the consultant how long his nephritic patient will live. The forced surrender of the practitioner to this multitude of precision methods in diagnosis has required the installation of extensive laboratory equipment in the progressive hospital, manned or womanned by technicians. The clinician takes great satisfaction in this elaborate study of his cases by precision methods, and he calls it scientific medicine. At this point enters the misconception. The clinician regards it all as pathology. It is not pathology but the practice of medicine by laboratory methods. Competent and properly systematized pathology and the consulting pathologist have been swept aside to make room for technicians, while the practitioner assumes the role of pathologist. What the hospitals are calling for is not pathologists but managing technicians, and almost anyone will do who knows how to count leukocytes, develop roentgen-ray plates, bleed a guinea-pig, read chemical analyses, and dictate reports in quadruplicate. Meantime the expense of caring for the sick has mounted rapidly and passed far beyond all reasonable limits. The cost of roentgen-ray plates alone, often duplicated as the patient passes from one hospital to another, may equal the former cost of his whole treatment. Group medicine arises to slightly reduce the expense, but with the sacrifice of the old experienced discriminating consultant, whose present function is now said to be finding some other test that has not been made. Our committee feels no particular concern with this tendency of practical medicine. The movement will doubtless work itself out in time. Since the army disgorged its swollen laboratory personnel, technicians are available in numbers, and they can be turned out at short intervals. What disturbs the committee is the diversion of funds from other essential objects in sound hospital organization, especially the elimination of the experienced consulting pathologist.

The Hospital Pathologist.

What are the functions of the hospital pathologist which make him essential in a well ordered institution?

1. To investigate the causes of the fatalities that occur in the hospital, to elucidate the course of the disease, record the lesions observed, correct partial or erroneous diagnoses, and help to reduce the preventable deaths.

2. To study the obscure and the rare cases and problems that arise in the laboratory, wards, and operating rooms, with all means at the disposal of a well equipped pathologic laboratory, including pathologic anatomy and histology, bacteriology, chemistry, and serology.

3. To keep himself familiar with the literature and progress of the medical sciences, so that he may become a competent authority in his own field, and prove of service to his clinical colleagues, most of whom have less time to devote to such pursuits.

4. To serve as consultant in the wards and operating rooms, where by virtue of his knowledge, especially of pathologic anatomy and bacteriology he should be able to bring data with which as a rule the clinician is less familiar.

5. To co-operate with the internist in general diagnosis; to serve the surgeon in gross anatomic and physical diagnosis so that both may escape the thralldom of the frozen section, the probatory incision and the exploratory laparotomy; to work out with the radiologist the interpretation of plates. The wide use of the pathologic conference shows now the progressive clinical staff value the service of the consulting pathologist.

6. To supervise the work of the clinical laboratory, maintaining technical standards, restraining excessive demands, establishing, correct indications for the resort to laboratory tests, and aiding in clinical research.

7. To pursue systematic research in problems of pathology, and to stimulate and train others in such work.

For the continued supply of such men the committee is deeply concerned, and they regard this field as the most important in postgraduate training in pathology.

Joint National Committee Suggested.

As preliminary training for such posts, we recommend the course outlined for the degree of Ph. D. in pathology, but there seems little probability that many men can take the necessary time for such studies before they become absorbed in routine hospital work. The practical difficulties in the situation are so numerous, and they involve so many interests in medicine, that we feel the problem requires the joint action of a national committee composed of internists, surgeons, and pathologists.

Some of the tasks of this joint body may be:

(a) To urge the necessity of maintaining the experienced consulting pathologist as a factor in hospital organization.

(b) To establish a scale of salaries which will attract and retain competent men in this field.

(c) To induce hospital managers to provide funds for such departments of pathology, if necessary by curtailing the outlay for minor methods of routine diagnosis, through a reasonable limitation of the use of such methods. Less roentgenology, serology, blood chemistry, etc., and more general pathology are needed in most hospitals.

(d) To further the affiliation of hospitals and medical schools for the purpose of providing better pathologic service in both.

(a) To co-operate with state boards of health and hospital standardization boards in concentrating and improving the standards of pathologic work in hospitals.

(f) To evaluate the function of the commercial diagnostic laboratory.

The serious plight of the small hospital in the matter of laboratory service is attested by the frantic appeals for help which they send out. Their only relief would seem to lie in a pooling of interests under a competent visiting pathologist, preferably one connected with a medical school or large hospital.

So numerous and complex are the problems connected with postgraduate training in pathology, and with pathologic service in medicine, that no very prompt change can be expected in the present status. The present trend of practical medicine is too strongly set, and the economic difficulties too firmly fixed to warrant the hope of early and radical changes in the position of pathology. Only by continued effort in the right direction, and by the firm pursuit of correct conceptions can the desired improvements be secured.

While this report is not primarily concerned with the scarcity of recruits in the fundamental medical sciences, our entire effort will be in vain if we are asked to "make bricks without straw." Professional pathologists will not result from any co-ordinated scheme of education no matter how thoroughly it may be planned, until the conditions in this specialty become sufficiently attractive to prospective graduate students to enable pathology to compete successfully with a clinical career. Consequently, when plans for improving and equalizing the standards of the laboratory specialties are being considered, due weight should be accorded the desire to so enrich the opportunities of students in these fields, that the laboratories may be assured of their proper proportion of worthy candidates for service.

Those who chiefly control the fortunes of medical schools seem at times to forget that while practical medicine would persist and even thrive without endowment, the medical sciences would soon cease to exist, if they did not receive intelligent support.

National Committee of Pathologists.

For these reasons, believing that a high development of general pathology is essential for the progress of medicine and the best standards of practice, the committee think it would be wise to establish a permanent national committee of pathologists to further the interests mentioned in this report. Some of the activities of this committee might be:

(a) To conserve the interests of pathology as the groundwork of medicine.

(b) To develop postgraduate training in pathology in its various branches.

(c) To investigate the pathologic work of hospitals and establish standards for the same; to pass on the competency of such applicants for or incumbents of hospital positions in pathology as may pass through the courses established or approved by the national committee.

(d) To secure co-operation of clinicians, medical schools, hospital boards, and governmental authorities, in maintaining advanced standards in pathologic practice, and in securing proper compensation and adequate opportunities for pathologists, both in hospitals and in medical schools.

Roentgenology

Robt. H. Lafferty, M. D., Dept. Editor

At the recent meeting of the American Roentgen Ray Society in Washington the first two days were devoted to papers and discussions pertaining to treatment. The matter of the massive dosage with high penetration was discussed at length. The matter seems to be still in a more or less unsettled state and few men are perfectly satisfied that it is entirely the best procedure. There may be extreme cases in which a three-hour treatment with a penetration from 200,000 to 300,000 volts and a filtration with a millimetre of copper may be indicated but so often these cases require a blood transfusion after the treatment to combat the shock that it makes one question the advisability of such strenuous procedure. Certainly one should approach the matter with caution. The entire matter, however, has had the effect of increasing the penetration, filtration, and length of exposure in all deep therapy.

The report of Hickey of Detroit of his work in the treatment of diphtheria carriers, upon which he has been engaged for about a year, was very interesting. Dr. Hickey reported very excellent results. Dr. Ledoux le Bard of Paris in discussing this paper reported that in a few cases in which he had used the ray he had also had good results.

Dr. Ledoux le Bard delivered the annual Caldwell lecture upon the subject of "The Progress of Deep Roentgen Therapy."

The symposium on Radiotherapy of the Thyroid was very complete and interesting. Uniformly good results were reported in Hyperthyroidism. In malignant conditions the results reported were excellent and Dr. Pfahler emphasized the fact of the great resistance of the normal thyroid cells to radiation.

Manges, Bowen and others further reported results in localizing non-opaque foreign bodies in the bronchi. This very important work first brought out by Manges in conjunction with Jackson was discussed some time ago in this column.

One of the features of the meeting was the annual banquet which this year was given complimentary to Dr. Frederick H. Baetjer of Baltimore. Few men have done more for roentgenology in America in the way of standardizing and stabilizing than Dr. Baetjer and it was very fitting that this the oldest society in this country, of which he is a most honored member, should thus honor him.

Dr. A. C. Christie of Washington, so well known and delightfully remembered by all men who were in the roentgenology division in the army, was president of the society.

Dr. W. H. Stewart, of New York, of pneumoperitoneum fame, was elected as president.

Publications Received

THE OXFORD MEDICINE, by Various Authors. Edited by Henry A. Christain, A. M., M. D., Boston, Mass., and Sir James Mackenzie, M. D., F. R. C. P., LL. D., F. R. S., St. Andrews, Scotland. In six volumes. Illustrated. Vol. VI, Oxford University Press, American Branch, New York.

The sixth and final volume of this magnificent series of books has just reached the subscribers. The volume is devoted entirely to Diseases of the Central Nerve System, and it was brought together under the editorial supervision of Sir James Purves Stewart. The contributors, without exception, are British. In the thirty-eight chapters the

last word is spoken about present-day knowledge of diseases affecting chiefly the central nervous system. The style, as in most British medical books, is delightful; words are accurately selected, and the statements are conservative. Syphilis of the nervous system, tabes, and general paralysis, are treated in three separate chapters by Sir Frederick W. Mott. He defines paresis as a fatal disease, and consequently he is not optimistic about the results of so-called modern scientific treatment. Early tabes is looked upon somewhat more favorably. T. Grainger Stewart contributes the chapter on disseminated sclerosis. The history of the disease and the theories relating to its cause are fully reviewed, together with the experimental work on lower animals in recent years. He inclines to the belief that the disease is caused by some specific organism which elaborates a toxin exhibiting a special predilection for deleterious effect upon the central nervous system. And then he reviews all the recent experimental work pointing to the validity of that theory.

The chapter on Hysteria by F. Golla is written with great clearness, and he does not lean at all in his views toward the Freudian concept of the affection.

The chapter on Epilepsy by William Aldren Turner is short, concise, and it ought to prove helpful to all physicians who are burdened with the responsibility of the care of such patients.

Not only should the physician who is giving special thought to nervous diseases have this volume amongst his ready-reference books, but it should likewise be within easy reach of every general practitioner. It is a practical, enlightening, helpful volume.

Wins Damage Suit for Diabetes—A jury before Supreme Court Justice O'Malley upheld the claim of Mrs. Rose Cohen that as the result of a collision between a truck of the Bacon Coal Company and a Gates Avenue car in Brooklyn, in 1919, she was injured in such a manner that diabetes developed and she became an invalid and lost 70 pounds. The jury gave a verdict of $12,000 against the coal company. During the proceedings Sir William Osler was quoted to prove that diabetes could be caused by shock.

Miscellaneous

EXPLOITATIONS IN PSYCHOLOGY*
or
Psychology Discussed From a Backwoodsman Standpoint,
or
A Rural Free Treatise on a Subject Which the Author Knows Nothing About.

Thomas E. Anderson, M. D., Statesville, N. C.

My mind was led into this "terra incognita" by an interesting article in the September number of "Southern Medicine and Surgery," published at Charlotte, N. C., by my friend and former countyman, Dr. Jas. K. Hall, of Westbrook Sanatorium, Richmond, Va., so well and favorably known to all of you, on the subject of "Orientation and Its Opposite, Disorientation." He defines the former, orientation, to be an understanding of one's self in relation to one's environment, to time, to place, and to one's self and to others. And disorientation means inability to understand one's self in these respects.

Well, he goes on to illustrate interestingly how recently on a trip from Richmond to Salisbury, and his old home, he became completely turned around at Greensboro by his, or the train's gyrations or circumflexions, to such a degree when he reached High Point by a view from the rear platform he was astonished to find that the station was on the wrong side of the track and that he was traveling north from whence he had come, also Thomasville and Lexington had changed sides and were keeping company with their ally High Point. Feeling that Salisbury would prove true to herself and to him he kept to the line and found to his further disgruntlement that the same jumbling process had taken place there. He found that the station had got on the wrong side of the railroad and that the Yadkin Hotel occupied a new location and the entire town had moved around through 180 degrees. The dining room was altogether

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* Read by invitation before the Ninth District Medical Society Meeting at Salisbury, N. C., October 27, 1921.

out of place, though the menu was up to standard and satisfying. Still pondering, perplexed, confused, addled, befuddled, mixed up, turned around, disoriented almost to the point of rejecting superstitions of the ages, he readjusted his hat and looking out of the dining room he was surprised to find the outside world had assumed quietly and suddenly its usual relations and the world and Richmond were themselves again. Now why all this detail and why this intrusion here on this dignified scientific body's time? The motto of Davidson College is, "Where liberty was born let light be shed." Is it not the function of this body to illumine and explain subtle phenomena? Now to the real crux of the matter: emboldened by the open-handed, frank manner of my friend, Dr. Jas. K., I am going to be equally frank and tell you the pranks this boasted city of yours has played on me, ever since your railroad entering from the west introduced the system of running down towards Spencer and backing back into the station. The first time I traversed that route and landed at the station I got off the train in full confidence with judicial soberness and started to go up town. To my great amazement the whole city was completely turned around and I was thrown into a maze to such a degree that a complete attack of vertigo was induced, a thing unknown to me, and which clung to me for some time. That was the occasion of my coming to Salisbury in the interest of organizing this Ninth District Medical Society in 1904, I think, and it was only by continued effort that I could keep my vast mental endowments in line. I feared some of you must have noted that I was a little off. Well, was that the only swallow of that summer? No, no, never since that time have I ever approached Salisbury from the west but that I am the victim of the same thing. I have long since accepted it and tried to minify it as much as possible. The somewhat strange thing about it is, that approaching Salisbury from the north or from Charlotte I do not feel it at all. Salisbury is ever right side up and hospitable to those points. So far as I am concerned this is an incurable state and an exhibition of a form of cerebration of which I have never been proud and of which I have said but little, feeling about it in some sort of way like Mark Twain said on his 55th birthday, "I have been an author 25 years and an ass 55 years." But when a man massive of brain and poise like my distinguished friend, the pride of his native county Iredell, Dr. James K. Hall, yields to the gentle wooings of these up-turning influences I am greatly uplifted by the thought that these are perhaps the penalty exactions of those largely mentally endowed.

Aspirin or Acetylsalicylic Acid—An Important Court Decision.

For many years the Council on Pharmacy and Chemistry, and The Journal, have been urging physicians to avoid using proprietary trade-marked names when prescribing drugs or chemicals obtainable under non-proprietary names. Two chemicals have been especially referred to in this connection: hexamethylenamin and acetylsalicylic acid. Many years ago, hexamethylenamin was found to be an effective therapeutic agent, especially as a urinary antiseptic. Since it was a well known chemical, it could not be patented. A commercial firm, however, seized the opportunity, coined the name "urotropin," and advertised it. As a result, "urotropin" became so impressed on the minds of physicians that many have been unable to eradicate the term from their minds, and still use it in prescribing this drug. Other firms coined other terms, such as "formin," "aminoform," "cystamine" and "hexamin," and advertised them widely; but "urotropin," being most extensively and persistently advertised, made the most lasting impression on the minds of physicians. And it is much harder to eradicate a first impression than to make a new one. As to acetylsalicylic acid: This drug was patented and the trade name "aspirin" coined for it by the predecessor of the Bayer Company. The seventeen years of exclusive monopoly and privileged advertising made an impression on the minds of physicians, and also on those of laymen who had become used to seeing the word "aspirin" in physicians' prescriptions. As a result, when the patent expired, although numerous preparations of this drug were made available under the true and descriptive name, acetylsalicylic acid,

physicians continued to prescribe the drug under its coined name. The rights in this product were eventually acquired by the Sterling Products Company. This firm—under the name of "The Bayer Co."—has conducted a strong advertising campaign in the newspapers that leaves the impression on the lay mind that there is no satisfactory aspirin except aspirin "Bayer." Among the several manufacturers who came into the market with this drug on the expiration of the Bayer patent was the United Drug Company. The owners of the Bayer product brought suit against the United Drug Company to prohibit the selling of the latter's product under the name "aspirin." The United States Disrict Court of Southern New York recently rendered a decision in this matter. This decision, which seems to be a compromise, is of importance to physicians. The ruling of the court notes that acetylsalcylic acid is known as such to manufacturing chemists, pharmaceutical houses, pharmacists and physicians, so that to them the word "aspirin" signifies only the product of Bayer origin, whereas the term "acetylsalicylic acid" is unknown to the average layman, though the term "aspirin" is. The pharmacist, therefore, according to the court's ruling, is justified in supplying a layman who asks for aspirin with acetylsalicylic acid tablets of any reputable maker. But the court rules—and this is the important point—that when a physician writes "aspirin" in a prescription, only the Bayer product can be supplied. Unless a physician wishes to cater to the concern owning the Bayer rights and to aid in perpetuating what was a monopoly for seventeen years, he should be careful to prescribe the drug under the term "acetylsalicylic acid." The court now places the responsibility directly on the medical profession. Avoid "aspirin"—write "acetylsalicylic acid."—Jour. A. M. A., May 14, 1921.

News Items

Dr. Roy B. McKnight has been appointed a member of the medical staff at Kenilworth Hospital, Asheville, N. C.

The North Carolina Orthopedic Hospital, Gastonia, has been opened for the reception of patients. When the Additional ward building, now under construction, has been completed, the capacity of the institution will be between fifty and sixty beds.

Howell's Hospital, Marion, S. C., was formally opened August 26. The hospital has twenty beds and there is a negro section on the outside with ten beds, making a total capacity for thirty patients.

Plan to Record Hospital Births—At the regular meeting of the executive committee of the State Board of Health, Columbia, S. C., a resolution was adopted making available for inspection by the State health officer, or his representative, records pertaining to births in all hospitals in South Carolina.

According to the Health Department, Pine Camp, Richmond, Va., is to enlarge its hospital facilities. So far as the $23,000 appropriation will permit, the camp will be reorganized to improve its facilities for the care of tuberculous patients. Dr. D. B. Cole is in charge of the Medical Department of Pine Camp.

According to a recent announcement, Dr. Allen Fiske Voshell, former resident orthopedist at Johns Hopkins Hospital, Baltimore, will assume charge of the department of orthopedic surgery at the University of Virginia Medical School and Hospital.

Dr. William Edward Brown, former first assistant to the director of the Catawba Sanatorium, Charlottesville, Va., and connected with the tuberculosis work of the State Board of Health for the last five years, has been appointed superintendent and medical director of the Blue Ridge Sanatorium, the State institution for the care and treatment of tuberculosis, located near Charlottesville. He succeeds Dr. Walter C. Klotz, who resigned to accept a similar position at Johnson City, Tenn. In addition to his work at the sanatorium, Dr. Brown will also instruct students of the medical department of the University of Virginia in the diagnosis and treatment of the diseases of the chest.

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A Case of Chronic Acetanilidism.

J. W. Schuman, Sioux City, Iowa (Journal A. M. A., August 13, 1921), cites the case of a nurse, aged 28, who complained of severe pain of two days' duration in the right mastoid region, requiring morphin for relief. She was deeply cyanotic. Her previous history was unimportant except for numerous operations since entering training six years previously. She denied taking any drug which might cause the color (cyanosis). Surgical consultation ruled out any middle ear disease. The urine contained many red blood cells; in fact, the color was chocolate brown. Following the statement of the ear surgeon that "the right ear was normal," the patient developed what appeared to be renal crisis (left), requiring morphin. It was noted, however, that she did not sweat during these attacks. Her temperature (axillary) ranged from 99.5 to 101.5 F. This, it was discovered, was due to an electric heating pad which was her constant companion; and she said that she chilled so that she could not trust a thermometer between her teeth. Later her temperature became normal, after the oral method was definitely instituted. The patient had now been under hospital care for more than two weeks. At about this time it was discovered that she had entered the hospital with 350 5-grain acetanilid tablets and she admitted that she had been using acetanilid for more than three years. She thoroughly deceived the staff of physicians (six) who had attended her for a period of more than two weeks. She presented symptoms which were baffling: (1) pain—a subjunctive symptom which cannot be measured; (2) hyperprexia (false); (3) hematuria (not constant, the source not determined, possibly menstrual). She was a malingerer and a drug addict.

Hospitalization or Penalization.

Closing his term on the Cincinnati Police Court bench for the year 1921, Judge Yeatman declared that cases coming through that court indicate need of an institution for the feeble-minded in Cincinnati. It is his opinion that many offenders should have hospital treatment rather than punishment for their shortcomings. Facilities for the segregation of habitual offenders and first offenders would help the situation, as would an industrial institution with farm facilities, Judge eYatman believes.

Dr. Claude D. Thompson, Lexington, N. C., was married to Mrs. Frances M. Clark of Richmond, Va., July 11.

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THE TREATMENT OF SARCOMA WITH RADIUM*

S. W. Budd, M.D., Richmond, Va.

Soon after the introduction of radium into medicine, it became evident that radium exerted a powerful action on malignant growths. Some of the most miraculous results known to medicine can be attributed to this element. Large sarcomata have been observed to disappear in a short time without reaction or discomfort to the patient. Cases that in the past would have been given up as hopeless have frequently responded to radium therapy in such a manner as to cause surprise and astonishment not only to the patient but also to the physician who instituted the treatment.

It is not my purpose to laud too highly the powers of radium, although I must confess that the preceding paragraph is tinged with optimism. The results as pictured above are not so common; a certain percentage of cases suffering with sarcoma are not benefited by radium therapy, and some are positively harmed by the injudicious use of it. It is not unusual to see a deep-seated sarcoma stimulated to active growth and widespread metastasis if the radium is given in insufficient quantity and the screening and distance from the radium to the tumor be too great. Radium is not a specific for sarcoma, as some would have us think. It works like magic at times, but its usefulness even in this disease is limited.

In dealing with sarcoma we are dealing with a wily and a treacherous foe, one that never knows when it is beaten, and one that may resist all forms of treatment no matter how well or how skilfully applied. An opinion, then, as to the result to be obtained from our treatment before we try our wares is of doubtful value. It has been my custom to make two or three applications of radium before giving the patient any information as to the prognosis in the case. I find that it is well to picture the gloomy side, because of the danger of metastatic nodules appearing elsewhere in the body. I have in mind three large sarcomata that I treated when I first took up radium therapy. In my optimism I pronounced them cured when the growths disappeared locally. These cases have subsequently succumbed to metastasis to the brain, liver and lung.

The character of the growth tells us, in a measure, what to expect from radium therapy, but there are many pitfalls in basing an opinion on the microscope alone. By checking up the nature of the growth, wherever possible, with a microscopic examination, we have been able to group sarcomata in those that do well with radium and those that are not so favorably influenced by it. As mentioned above, even though the nature of the growth is known to us, the prognosis should always be delayed until radium therapy has been given a fair trial.

In a general way we have found that a sarcoma composed of cells that exhibit vegetative characteristics is usually very malignant clinically but responds favorably to radium therapy; while those that are made up of cells that show a tendency to differentiate are not so malignant clinically, but react sluggishly to radio-activity. In practically every sarcoma there is an attempt on the part of the cells to differentiate into some higher structure, but the finished product is not quite that of normal tissue. There may be exceptions to the statement that the key to malignancy in sarcomata lies in the amount of its differentiation, but these exceptions are few.

One of the most malignant sarcomata is one arising from cells similar to those seen in the primitive streak—in other words, one arising from cells of low grade differentiation. This variety of

*Read before the Spartanburg meeting of the Tri-State Medical Association of the Carolinas and Virginia, February 16-18, 1921.

sarcoma is commonly known as round cell type, and while it is difficult of cure from a surgical standpoint, it responds to radium therapy, with the possible exception of lympho-sarcoma, more readily than any other of the sarcomata. Spindle cell sarcoma is more highly differentiated than the round cell type, and theoretically it should be less malignant. As a rule, it does not grow quite as rapidly, but this fact is largely influenced by the idiosyncrasy of the patient. The spindle cell sarcoma is not as favorably influenced by radium as the round cell variety. The fibro-spindle cell, the osteo sarcoma, the chondro sarcoma are tumors of a higher differentiation than any of the sarcomata, and they are perhaps the least malignant of all. They grow slowly; they are fair operative risks; but they are quite sluggish to the action of radium.

One can see at a glance that the diagnosis of sarcoma is not sufficient if the treatment is to be conducted along scientific lines, but I question the right of the radiologist to get a bit of tissue from all tumors to establish the diagnosis of the variety of sarcoma with which he is dealing. Wherever a bit of tissue can be gotten without injury to the patient, we always make a microscopic examination of it, but we do not expose or cut into a tumor for this purpose alone. It has been said by some that cutting into a tumor is not attended by danger. This may be so in animal experimentation, but my experience with malignant growths in the human species has been different. Practically all of the sarcomata that I have treated have been operated on one or more times, either for diagnosis or for removal of the growth, and most of the patients date the period of most rapid growth of the tumor to the time just following the operation.

The size of a growth should not deter us from giving a patient radium. In fact, I would much prefer to treat an enormous tumor with no apparent metastasis than a smaller one with several nodules in the region of the original growth. Sarcomata that grow rapidly and become large are not so prone to metastasize as the smaller variety. I never regard a localized tumor as hopeless, no matter how large it may be. I believe that the histories incorporated in this paper justify such an opinion.

The treatment of sarcomata is largely influenced (1) by the location of the growth; (2) by the amount of secondary infection: and (3) by the toxemia the patient exhibits.

Sarcomata of the extremities, head, neck, and body that have not suppurated or from which the patient is not showing any manifest poisoning may be treated at first with the gamma ray alone, and if this method fails it is well to bury the radium deep into the substance of the growth so that the tumor can get a taste of the beta, the secondary and the gamma rays. There is always some risk in burying needles, as an infection may be started which, coupled with the toxemia arising from tissue destruction that usually follows a large radium application, may so weaken the resistance of the patient as to cause widespread and rapid growth of the tumor or the death of the patient. On one occasion we had this happen to us. There was a wide dissemination of the growth, and the patient died with metastasis to the brain. Sarcomata of the head, neck, body and extremities, if there be no clinical evidence of toxemia from them, should be treated vigorously from the outset. We begin our treatment with from 2500 to 5000 mg. hours of gamma ray in a single treatment or in a fractional treatment extending over several days. The radium is placed from one-half to one inch from the skin surface. In the small growths, where few changes of the radium can be made, 2500 mg. hours of the gamma ray is employed, but in the large tumors having ample skin surface for many changes 5000 mg. hours are used. If the tumor does not respond to the gamma ray we have the patient return in about a month for the second treatment. This time the radium is buried deep into the substance of the growth and 2500 to 5000 mg. hours of the unfiltered ray are given. If there is no improvement locally we feel that we have given the patient as much treatment as is justified. If there is improvement we continue the treatment, grading our dose by the size of the tumor.

In sarcomata of the nasal and oral cavities we apply the radium directly into the growth with needles, or against the growth if needling is impossible. If the growth is needled and there be

plenty of sarcomatous tissue to protect the healthy structures from the action of the radium we allow the needles to remain in the tumor until the tumor gets from 500 to 1000 mg. hours of unscreened radium. If needling is inapplicable we screen the radium with brass and rubber and protect the healthy structures with lead plate and rubber, and give from 250 to 500 mg. hours. We repeat the treatment at intervals of a month and, as in sarcoma elsewhere, give at least three treatments before attempting to prognose the outcome. Some of our most brilliant results have been in sarcomata in this region.

In sarcomata where a secondary infection exists or where the patient is showing signs of toxemia we should proceed slowly with our radium therapy. It is never well to apply the radium too near the infected area or to give the patient too long an initial dose. An extension of the infection or a too rapid liberation of toxins may be more than the patient can stand. In the nasal and buccal cavities, if the infection is heavy, we use an initial dose of 250 to 500 mg. hours. It would be hard, of course, to find a growth in this region that is not infected, but if the patient is not too toxic we proceed as if no infection existed. In sarcomata of the head, neck, body and extremities where the patient is toxic the treatment is with small doses, 1000 to 2000 mg. hours of gamma ray, with the radium placed about one-half to one inch from the skin, and we are very careful to keep the radium from the infected area, if one exists. We apply the radium at intervals of from ten days to two weeks, and we bury needles or increase the dosage as the condition requires.

During the past two years we have completed the treatment of twenty-four cases of inoperable sarcoma with the following results:

Twelve, or fifty per cent, have died. In six of these there were multiple tumors when the patients presented themselves for treatment, and they were not helped in any way by radium. In one case a single growth arising from the periosteum of the shoulder was not benefited by radium and the patient died with an invasion to the lung. In five cases the growth disappeared locally and the patients remained well for several months, but died later with metastasis to the lung (2), liver (2) and brain (1).

In twelve cases the growth disappeared locally. In seven of these there has been no sign of a recurrence or a metastasis. Five of these, as mentioned above, have died from a widespread metastasis.

Microscopic examination of the sarcomata was made in ten of the twenty-four cases. Of these there were four lymphosarcoma, three of which cleared up under treatment and one died after the first treatment with extensive metastasis. There were two round cell sarcoma, one of which died with metastasis to the brain. The other case is apparently cured. There were two melano sarcoma, one of which was not affected by the radium, while the other cleared and remained well for six months and died with a metastasis to the liver.

There were two spindle cell sarcoma, one uninfluenced by the treatment, while the other case cleared and is apparently well. In fourteen cases no microscopic examination was made, and among these six have cleared and four have subsequently died.

Two of the sarcomata were located in the tonsil, and both tumors disappeared under treatment. There were two sarcomata on the hard and soft palate, neither of which was influenced by treatment. There were two sarcomata of the antrum of Highmore, both of which cleared up under treatment. There was one retroperitoneal sarcoma that improved markedly while in the hospital, but we have lost track of her. There were four sarcomata of the shoulder; one cleared, one died with metastasis to the lung, and we have lost track of two. There were five sarcomata of the thigh and groin; two cleared, two were unimproved, and we have lost track of one. There were two sarcomata of the shin; one unimproved, and we have lost track of the other. There was one sarcoma of the forehead that disappeared under treatment. There were three tumors of the body; two cleared but subsequently died with metastasis to the liver, and we have lost track of the third. There were three tumors of the neck; two cleared, one died with metastasis to the brain.

Case 1. Age, 60. Date, October 21, 1919.

Diagnosis: Sarcomata of nose and antrum of Highmore.

Microscopic diagnosis: Spindle cell sarcomata.

Complaint: Stoppage of nostril on left side, swelling of face.

F. H. and P. H.: Unimportant.

P. I.: Began two years ago with a fullness and stoppage of left nostril. She was told that she had polyps and had them removed several times. About one year ago the left side of the face commenced to swell, and the swelling has progressed until there is a tumor about the size of a croquet ball on left cheek.

P. E.: Patient on admission to hospital had a temperature of 104 and was semi-conscious. She had a systolic pressure of 180, and a heavy trace of albumen and casts. The Wassermann test was negative. The tumor was about the size of a croquet ball and it came from the deep structures of the face. The nose was much swollen on left side, and the nasal cavity was entirely blocked by the bulging of the growth into it. The frontal sinus and ethmoid cells were infected, and there was considerable discharge from nostril on right side. The left eye was practically closed, and there was much pus under the lid. X-ray showed the anterior bony structures of the face had been eroded by the growth.

The patient received six courses of fractional treatment of 2500 mg. hours. Radium has been applied into the antrum, nasal cavity, and on the exterior surface. The tumor has entirely disappeared.

Case 2. Age, 40. Date, July 8, 1919.

Diagnosis: Sarcoma of neck, avillae and lungs.

Microscopic diagnosis: Lymphosarcoma.

Complaint: Swelling of neck.

F. H. and P. H.: Unimportant.

P. I.: Patient first noticed a fullness of the right side of neck about six months ago. This fullness has increased rapidly. About one month ago he noticed a lump in the right axilla. This at first was small, but it is now about the size of a hen's egg. Patient has had night sweats and fever and has lost about twenty pounds in weight.

P. E.: Patient is poorly nourished man with a temperature of 102, and he gives the impression of being quite sick. Heart, lungs, abdomen and extremities are negative. His urine, Wassermann and blood count are negative. His neck is about nineteen inches in diameter, and all of the enlargement is on the right side. There are several tumors about the size of a robin's egg in the region of the mastoid process. There is a mass extending from the lobe of the ear to the clavicle. It is somewhat irregular in outline, and gives the appearance of several glands running together. The mass is hard and fixed to the surrounding structures of the neck. The axillary tumor is about the size of a hen's egg and is freely movable.

The patient was given four fractional treatments of 3000 mg. hours. The gamma ray was employed. The tumor of neck and right axilla disappeared.

Six months later the patient developed a tumor in the left axilla which grew to the size of a lemon before he came back for treatment. This tumor disappeared with two treatments of 1000 mg. hours of gamma ray.

About two months ago I was notified that my patient was being treated in the T. B. dispensary. He was X-rayed and a large sarcoma of the right lung and mediastinal gland was revealed. He also had some small tumors in both axillae. The patient is now under treatment. His axillary glands have disappeared and his right lung has practically cleared.

Case 3. Age, 35. Date, March 6, 1920.

Diagnosis: Sarcoma of neck with metastasis to brain.

Microscopic diagnosis: Round cell sarcoma.

Complaint: Tumor of neck; blindness in right eye.

F. H. and P. H.: Unimportant.

P. I.: Tumor appeared on neck about sixteen months ago. It grew rapidly from the start, and four months ago it was removed at operation and a diagnosis of round cell sarcoma was made. Soon after the operation the tumor commenced to grow, and it has increased in size until it has reached its present dimensions. Two weeks ago patient thought he had a slight stroke of paralysis, and since that time he has had severe headaches and has been blind in right eye.

P. E.: Patient is poorly nourished man of small stature. There is no paralysis, as suggested in history. He is

blind in right eye. Wassermann negative; urine and blood count are negative. Heart, lungs, abdomen and extremities are negative.

On the right side of neck there is a large mass extending from the lobe of the ear to a point one inch above the clavicle. The mass is smooth in surface and shows the scar of operation. The tumor is bound to skin and underlying structures and stony hard in consistency. The diameter of neck over most prominent part is 18 inches.

The patient was given 2000 mg. hours of gamma ray with no improvement. Three weeks later he came in with a temperature of 101 degrees. We gave him 5000 mg. hours of radium element buried into the growth. He had a terrific systematic reaction and six days later the neck tumor had disappeared. He died about a month later with a brain metastasis.

Case 4. Age, 40. Date, October 12, 1920.

Diagnosis: Sarcoma of thigh.

Microscopic diagnosis: Myxo spindle cell sarcoma.

Complaint: Tumor of thigh.

F. H. and P. H.: Unimportant.

P. I.: A tumor appeared in right groin about twenty years ago. It grew to the size of an orange and remained that size until two years ago, when it commenced to grow very rapidly. It was removed eighteen months ago. The wound healed and the patient remained well for several months. The tumor reappeared and has grown steadily.

P. E.: The physical examination is negative except for the large tumor of right thigh. The mass measures about forty inches in its greatest diameter. It extends upward over the crest of the ilium and downward to the middle of the thigh. The surface of the tumor is irregular in outline and there are several cyst-like growths extending above the surface of the tumor in its upper part. In the region where a drainage tube was employed there is a sarcomatous granulation extending an inch above the surface. A portion of the tumor was excised for examination and the diagnosis of a myxo sarcoma was made of it.

Patient has received about a thousand mg. hours of gamma ray every week since October, 1920. His right thigh now measures about twenty-four inches in its greatest diameter.

RECURRING VOLVULUS OF DESCENDING COLON AND SIGMOID FLEXURE WITH MEGACOLON.*

A. Murat Willis, M.D., Richmond, Va.

The following case, referred to me by Dr. Douglas VanderHoof, presents an interesting and, I believe, not very uncommon condition.

Mrs. L. B. W., white, widow, school teacher, age 45, complains of "stomach trouble," rheumatism and neuralgia. Family history not significant, except that the patient's mother died of tuberculosis. Patient states that she has "never had a strong stomach;" even as a child, she had to be very careful as to her diet. Suffered from attacks of abdominal pain which would come on early in the morning and last from one to ten days. No attacks of this character for two years until recently, when two occurred, characterized by severe diffuse abdominal pain, unaccompanied by fever or vomiting. Last attack was four months ago. Bowels constipated as long as she can remember; stools appear normal. Normal weight, 125 pounds; today weighs 118.

Examination reveals a patient who is well nourished and does not appear sick. Teeth and gums are in good condition; remnants of tonsillar tissue which do not appear diseased. Heart and lungs negative; blood pressure, systolic, 130; diastolic, 90. Abdomen large; symmetrically distended; no dullness of the dependent portions. No tenderness or masses. Urine shows a slight trace of albumin; gastric analysis negative.

The history of the recurring attacks of pain suggested the probability of a diseased appendix, and, in the absence of definite findings elsewhere, an exploratory operation was deemed advisable.

March 21, 1918, under ether anesthesia, the patient was operated on. A grossly diseased appendix was removed. In addition, the transverse colon was found enormously dilated, appearing to be at least six inches in diameter and having very thin walls. No obstruction of any kind could be discovered to account for this dilatation. It was immediately recognized that the intestinal condition must be one of congenital

*Read before the Spartanburg meeting of the Tri-State Medical Association, February 16-18, 1921.

idiopathic dilatation of the colon; this serving to explain the history of obstinate constipation and abdominal distention. We believed the diseased appendix was sufficient to account for the attacks of abdominal pain, and this, coupled with the fact that the patient's general condition seemed unaffected by the enlargement of the gut, led to the decision not to attempt radical measures. The post-operative course was uneventful and patient was discharged in good condition April 20, 1918, with instructions to report at frequent subsequent intervals.

April 29, 1918, patient returned to hospital and was examined roentgenologically by Dr. D. D. Talley, the results of this examination confirming the observation as to the dilatation of the colon. The three pint barium enema was completely lost in this portion of the bowel.

December 12, 1918, the patient reports that she has been very well up to the past few weeks, when she began to be troubled with frequent loose stools and attacks of abdominal distention; looks well and has good color.

May 13, 1919, patient weighed 124.5 pounds. Looks very well and has had no abdominal symptoms except attacks of flatulence and four months ago had a "bilious attack," characterized by nausea without pain.

January 3, 1920, patient still has some flatulence, but looks very well.

April 17, 1920. About two weeks ago, had one of her "gas spells," rendering it necessary to wear a kimona all day. Takes a lapactic pill and mineral oil every night.

August 21, 1920. Patient admitted to Johnston-Willis Sanatorium with the history that for about two weeks she has been suffering with great abdominal distention, accompanied by severe pain in left side, nausea, and occasional vomiting. Bowels obstinately constipated.

Examination shows patient moderately sick; abdomen tensely distended. White count, 10,800; pulse, 98; temperature, 99.5° F.

August 22, 1920, proctoscope inserted and rectal tube introduced, resulting in passage of much gass and relief of distention.

August 31, 1920. Operation—Under ether anestresia, a left rectus incision was made about seven inches in length. The descending and part of the transverse colon was found enormously dilated. While the remainder of the large intestine was somewhat smaller, though even this part of the gut seemed to be about six inches in diameter. Apparently about midway the transverse colon, there was a sharp line of demarcation between the extremely dilated gut and the remainder, while the mesentery of the former was similarly sharply differentiated, being dark in color and showing hemorrhagic areas. The cause of the obstruction from which the patient was suffering at admission was immediately obvious. The elongated mesentery to the very much dilated portion of the gut rendered the intestine so mobile that when feces accumulated sufficiently in this portion, the weight was sufficient to cause the latter to fall downward and to the right, with a resulting angulation of the lower sigmoid, which was fixed; in other words, produced a volvulus. An analysis of the patient's history leads to the conclusion that this had occurred previously and to this occurrence, and not the diseased appendix, is to be ascribed the recurring attacks of abdominal pain, distention, and nausea. Schaaning (1) has recently reported two similar cases.

Believing the cause of the recurring attacks in my patient to exist only in the extremely dilated, mobile part of the gut, it was deemed sufficient to excise it alone, leaving the relatively less dilated ascending and part of the transverse colon. The vessels in the mesentery of this part of the gut were first ligated and the intestine resected. An end-to-end anastomosis was then made, catgut sutures reinforced with silk being employed.

The part of the colon removed was enormously dilated, the greatest circumference being 26.7 inches; the total length being 36 inches. The walls were extremely thin, there being a complete absence of the muscular hypertrophy which constitutes a striking feature of many cases of Hirschsprung's disease.

The patient reacted well from the operation and four months later reported that she was completely relieved of the attacks of abdominal discomfort.

Dilatation of portions of the intestinal tract may occur in any part of it, but the most usual location of such dilatation is the colon. The dilatation may be the result of some obstruction, but in

certain cases, there is no evidence of an obstruction existing prior to and giving rise to the dilatation. From the history of the early onset of obstinate constipation and the absence of any evidence of pre-existing obstruction, it is obvious that the case I have reported represents an instance of true congenital megacolon or Hirschsprung's disease.

Though Hirschsprung is often credited with having been the first to describe the pathological condition which bears his name, as a matter of fact, no less than twelve foreign and ten American reports antedate his paper, which appeared in 1886. To Parry is due the credit for the first published report of congenital dilatation of the colon, this author in 1825 having described the condition as encountered by him in the autopsy of an adult in whom it was present. Eleven years later, Ebera reported a case and discussed the condition with remarkable fullness and clarity.

As the name indicates, the etiology of "idiopathic" dilatation of the colon is unknown. A number of theories have been suggested to explain its origin, but none of them is sufficient to explain all the reported cases. It seems advisable to disregard those hypotheses which are based upon the discovery of some definite obstruction as the cause. Cases where this obstruction was responsible for the dilatation are not instances of true Hirschsprung's disease: it is better to apply to them the term "pseudo megacolon." Obstruction not infrequently occurs not as a cause but as the result of the dilatation; as is well illustrated by the case I have reported. To explain the genesis of the true congenital megacolon, it has been suggested that a colitis may arise either as a result of bacterial infection or dietetic errors. This colitis leads to injury of the intestinal wall, with a tendency to stagnation of the intestinal contents and the production of excessive amounts of gas. The pressure of this gas distends the weakened intestine and the ensuing dilatation renders the onward propulsion of the fecal mass difficult, so that hypertrophy takes place. In many of the reported cases, however, the colitis is only a late manifestation; appearing as a consequence and not as a cause. Hirschsprung in his earlier papers emphasized the congenital idea. He believed that the condition was a disease entity, due to some pathological process occurring in utero or arising from a congenital defect. The observation of Concetti in 1899 that there may be demonstrable deficiency in the muscular coats of the large intestine lends support of Hirschsprung's contention. Formad suggested that there is faulty development of the neuro-muscular apparatus of a segment, a theory supported by Bing and Hawkins. Finney (2) points out, however, that there is often, if not invariably, no demonstrable histological evidence of faulty innervation, the nervous elements constituting Meissner's and Auerbach's plexuses being, apparently, normal. The attempt has been made recently by Retzlaff (3) to revive this theory under a modified form. He believes from the study of a case occurring in a man of 46 years that he has been able to demonstrate the existence of a state of "sympathicotonus," the patient reacting very markedly to subcutaneous injection of adrenalin and being little affected by atropine and physostigmine. Since adrenalin acts selectively on the structures innervated through the sympathetic while atropine and physostigmine influence chiefly those which are innervated by the cranial autonomic, he infers that this patient had an increased irritability of the sympathetic nervous system. The sympathetic supplies inhibitory fibers to the intestine, and, since it is in a state of increased irritability, he contends that it will cause intestinal paresis and resultant dilation. Kackel (4), however, points out that this would fail to explain the subsequent hypertrophy, and he reports a case that he has observed in a child of four and a half years where not only was the patient insusceptible to the dose of adrenalin that Retzlaff (3) found effective in his patient, but in Kackel's (4) case, the dose of atropine which Sachs states to be ineffective in normal children produced a decided reaction.

From the appearance of the mesentery, with the dilated lymph and blood vessels, Finney (2) has suggested that we may be dealing with a condition of "hypernutrition." It is obvious, however, that granting his contention, we have made no advance in explaining the underlying etiology.

As regards the pathological anatomy of the condition, there are generally both dilation of the intestine and also hypertrophy of all the coats, though in

a certain proportion of cases, mine being illustrative, the muscular hypertrophy is absent. It is the more common belief that the dilation is primary, the hypertrophy occurring secondarily because of the difficulty of emptying the dilated portion. As a result of the fecal stagnation, there are encountered areas of degeneration or necrosis, the latter occasionally leading to perforation. In the reported cases, the dilation has been very great; a diameter of six inches and a capacity of forty pounds in one case and a capacity of sixteen liters in a second. These dimensions were exceeded in my case, the greatest diameter being 8½ inches. The dilation may be present at birth, and in a case reported by Hobbs and de Richemont, it was so pronounced as to interfere with delivery. In other cases, it becomes prominent later in life.

The diagnosis is based upon the history of obstinate constipation alternating with periods of diarrhoea, together with the results of examination of the patient. In most cases of true idiopathic megacolon, the onset of symptoms dates from birth or very soon thereafter. In his review of the cases reported up to 1908, Finney (2) states that about 70 per cent gave symptoms from birth; and about 20 per cent more developed them within a few weeks. The lapse of time without stool is almost incredible in some of the reported cases, being as much as three months in one instance. In many of the cases, this constipation appears to exert an injurious action on the patient's general condition, but in others, and this is illustrated by my case, there may be little or no disturbance of the health.

The characteristic feature found on examination is the abdominal distention. This may be extreme, at times so great that the abdominal circumference exceeds the patient's height. It is important to note that rectal examination may be entirely negative, the rectum not being involved in the dilatation. Other viscera may be displaced by the dilated colon, as illustrated by an interesting case recently reported by Carnot and Friedel (5). In their patient, the heart displaced to the right of the midline, resumed its normal position after resection of the dilated portion of the colon. The malposition had been present so long, however, that the resumption of the normal position gave rise to circulatory disturbances, culminating in the patient's death the day following the operation.

About the only condition which may cause confusion is tuberculous peritonitis. The distention of tuberculous peritonitis is due, however, to the accumulation of fluid, and Finney (2) states that ascites has never been described in any of the reported cases of congenital megacolon.

Medical treatment can never effect a cure of the condition. If the constipation is amenable to the ordinary cathartic measures and the patient remains in good physical condition, it is probable that recourse to surgery is unnecessary. In other instances, where there is evidence of impairment of the health from the absorption of the decomposing mass in the intestine; or, as occurred in my case, a serious complication should occur, operative measures are distinctly indicated. The nature of these procedures must be determined by the conditions present in the individual case. In young patients, resection of the dilated gut and end-to-end anastomosis has given the best results. It seemed wiser in my case not to attempt such a radical operation; we were content with the removal of that portion of the intestine which seemed responsible for the recurring obstruction, leaving untouched a considerable amount of moderately dilated colon.

In conclusion, it is probable that if surgeons keep in mind the possibility of the occurrence of this condition and, in patients with a history of long-continued, obstinate constipation where physical examination reveals a much distended abdomen, subject the patient to careful roentgenological study, megacolon will be recognized even more frequently than it has been in the past.

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THE MORAL OBLIGATION OF THE MEDICAL PROFESSION TO HUMANITY*

By Dr. Edwin M. Mann, Kenbridge, Va.

"Every man owes a duty to his profession," and in no profession is this obligation more clear or important than in the medical. When a man begins the practice of medicine, he assumes one of the highest obligations in life, because he is dealing with human life, and with each life there is a soul at stake.

With the exception of his duty to his God, the moral obligation of a physician to humanity is the most sacred of all obligations. It is this moral obligation of our profession that reaches deep into the heart of true manhood and is most potential in making the ideal physician. And this moral obligation of our profession constitutes a strong link in the chain that binds the medical profession to the future welfare, prosperity and health of our nation, for on the physical condition of her people depends absolutely the mental, moral and spiritual condition of the nation. On these conditions of a country depend her rank and standing with the other nations of the world. Health and character make a strong and resistent nation. These are what we must have if we are going to hold our position under the responsibilities we assume as the stronghold of civilization.

The man who enters our noble profession should entertain no scheme or undertaking that does not fully recognize its duty to humanity. Such was the position of our profession at the outbreak of the world war, when we responded so nobly to our country's call for the protection of the oppressed; so let each individual physician be guided by the high moral principles of his profession and seek to render the greatest service in the fields of deepest need and widest opportunities. Let each physician in this present time of need sincerely fulfill his duty to his profession and his moral obligation to humanity.

At the present day the greatest call and the deepest need of our profession is to exert and demonstrate this moral obligation the greatest in the world's history. We must never let it slip our memory that "Together we stand, divided we fall." In this connection it must be understood that I am referring especially to preventable diseases, such as tuberculosis, typhoid fever and diphtheria. Fifty years ago we might have pleaded ignorance but the plea of ignorance today will be a reflection upon our profession and ourselves, because if we sin we do so in the full blaze of science which, if followed, will not permit children and mothers, and others, to die from preventable diseases.

It is true that the mortality in most of the preventable diseases is decreasing but maternal and infant mortality is not diminishing in the United States. Statistics show there were 300,000 deaths of children last year; 150,000 dying before they were a month old, and about 50,000 women die every year in child-birth, many of them from neglect. Do we forget that the boy and girl babies of today are the future fathers and mothers of our country? Do we fail to realize the inestimable value of our women? That without their love and ministrations we would have neither home, morality, and little of Christianity, even if civilization would not be endangered.

Let us remember that God created man in His own image, free from physical imperfections and disease, but by disobedience a great part of that perfection has been lost through disease. Unless these processes are checked, the force of evil will mar still more the image, until man is buried in physical and moral filth.

This country has long professed a horror at the ancient, Oriental World's practice of exposing infants for the purpose of their destruction, but what essential difference is there between that action in a poverty stricken population and the failure on our part to prevent the annual preventable deaths of half a million of the citizens of our enlightened republic?

What actuates us in our inaction in the improvement of the mental, moral and physical condition of our nation? Are we not the richest nation that the sun ever shone upon? Are we not a most charitable and Christian people? We have the means and should have the desire to save the people.

Millions of dollars were appropriated last year to be used in improving cattle, horses and swine; for killing boll wee-

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vil and rats; for hatching fish and promulgating lobsters. The Federal Government appropriations financed the vast life-saving enterprise, which Hoover carried to success, for the saving of women and children in Belgium, France, Servia, Armenia, and Italy. Congress last year only took ten days to appropriate $33,000,000.00 to raise the salaries of postal employees.

But in 1917 there were nine countries, and in 1920 eleven countries in which a woman was safer in child-birth and babies had a better chance for life for the first twelve months than in the United States. Yet, with these facts, Congress turned down, without a penny, the bill which asked for an appropriation of only $3,500,000 to be used in saving the mothers and babies of this country. With these undisputable facts before us, I can but think that our present condition is a disgrace to any civilized nation.

Our knowledge of germ disease has put the use of preventive medicine among the most important duties of the practicing physician and sanitarian of today, for most of the diseases that have been sweeping humanity off the earth in countless numbers, before a helpless profession, can now be controlled by that profession if it will fulfill as it should its moral obligations to humanity. To win success in this fight, the public, the local, State and Federal Health Boards and the medical profession must work in hearty co-operation.

I believe that this earnest work in unison can wipe out tuberculosis, typhoid fever, diphtheria and other preventable diseases. I also believe that the work necessary along this line, by building up the health of the people, will largely decrease other diseases. As far as family and personal hygiene is concerned, we must look for our salvation through our schools, the right class of literature and lectures to the masses, and above all to the instructions and teaching along this line, given in the homes by the family physician.

In cases of diphtheria we have a positive cure in diphtheria antitoxin, and in antitoxin we have an almost absolute preventive, which is effective temporarily when administered at the time of exposure. Thus we are actually in a position to protect children during the period of greatest susceptibility. Yet, despite the efforts of local and state health departments the mortality is very discouraging. Hundreds of children die annually of diphtheria. This disease showed a decided increase last year in Virginia. Smallpox also, though we have in vaccination a decided specific against the disease. It was the fulfillment of our moral obligation to mankind which made the world stand amazed at the remarkable achievement of the medical profession in Panama, which made forever the name of Gorgas an honored word throughout the world. This Government and its medical profession, working in unison, have the same chance of success in tuberculosis, diphtheria, smallpox and typhoid fever as Gorgas did in Panama; and we should use all the means at our disposal to accomplish for the world what he did in Panama.

I think that our main trouble is that too many of those who hold positions of public trust, influenced by commercialism, are dominated by moral cowardice, and they are not helped to overcome that feeling because of the fact that the large majority of our people are affected the same way. By reason of this condition, we are fast becoming a nation of hypocrites in relation to all concerns which vitally enter into the creation and maintenance of a healthy public sentiment, as the foundation and life of our national ideals.

No one will dispute the fact that the State's welfare and the protection of all mankind against preventable disease is the foremost and highest duty of our State and medical profession.

The greatest and most cruel tragedy in life is for a man to choose medicine as his life's work, and when he enters into his professional duties, to forget and ignore the moral obligations he owes to humanity. We should further realize that these moral obligations upon all men are to join actively in all public and private efforts for the betterment of our State and Nation, especially in regard to the physical and moral condition. We should also remember that these sacred duties of our profession should not be confined to our individual patients alone. We should array ourselves against commercialism, for commercialism, unrestrained, greatly contributes to human misery and suffering. It is the duty of each and every physician to perform his duty as sanitary officer whenever the occasion

arises. It is a professional obligation of each of us to do his part. We who fail in these may stand well socially and financially; we may sit "snug and satisfied" in our churches, but as sure as there is a just God, we will not hear even so much as an echo of that "well done" on the day of judgment.

We have no right to allow either commercialism or social and financial matters to interfere with our public duties in our work of eliminating preventable diseases. I deem it much more of an honor to ourselves and to the medical profession to instruct the public mind in regard to the danger of contracting and the best methods of preventing diseases, than it is to fuss or complain against some poor fellow for having a few tin cans or a little pile of trash in his back yard.

It should be our greatest ambition in this campaign against preventable diseases to give our every aid to the accomplishment of its purpose. Therefore, let us so direct our efforts that they will prove of the greatest value. Some one has well said, "If the people knew more, they would do more."

The present public health problem is largely one of education. Ours is not a people that can be driven to do things blindly; there must not only be a reason, but the people must know that reason before we can secure their intelligent co-operation with our efforts in their behalf. This is literally true, and to explain this reason to the public undeniably falls to the duty, and is within the power of the medical profession.

"If this America of ours was worth fighting for and dying for against the German guns, it is worth fighting for and dying for against any enemy that menaces it." Yes, it often takes more courage to live for a cause than to die for it. If any power should declare war against our country, we would not sit quietly and wait until they began the destruction of our homes and the murder of our wives and children. Our first step would be to use all our power and force in preventing their landing on our soil, and next to destroy those who did land. The present enemy, preventable disease, has not only threatened us, but the great "germ army" has secured a foothold in the very vitals and foundation of our nation.

America spent about $300 per capita for Democracy; about $266 per capita for the late war. We pay each year about $2.00 per capita for fire and police protection; about $18.00 per capita for education; yet when we come down to the very foundation of the life of our country, public health, we find that it received only 29 cents. This should not be permitted by an enlightened people.

Out of our entire army, only 23 died, in nineteen months, of typhoid fever. A disease born of inexcusable filth. Still, in our civic life, 30,000 perished in the same length of time from eating and drinking filth. Of all men drafted for service during the war, 35 per cent were reported as physically unfit. This was a terrible slur on our national efficiency. Goldsmith describes us as a land "where wealth accumulates and men decay." True or not true, it is the way that others see us.

The horror of war will be but a dream compared to the horror caused by germ diseases, unless checked, because they weaken the moral, mental, physical and spiritual condition of our nation. Do not let us wait until death steals into our homes and takes some of our loved ones.

If our manhood and womanhood fails to check the destruction of human life by preventing diseases, then shall we hear the wail of affliction, suffering and misery throughout the land. Then shall we hear the cry from the desolate mother, "My God, my God, why hast Thou forsaken me!" Then shall the manhood of the State, in conscience, see the writing on the wall, "The traitor to humanity is the most accursed."

When we are gone, we should desire no other monument than the record of the humble things that we have accomplished for God and our profession; and no greater praise than to have it said, "They gave the best years of their lives in the discharge of their moral obligation to humanity." "Let him who would be the greatest amongst you be the servant of all."

THE RELATION OF GOOD HEALTH TO GOOD CITIZENSHIP*

By Elmer S. Waring, M.D., New York City.

Rudyard Kipling says in a story called "Wireless" that these are the best five lines in English verse:

But O, that deep romantic chasm which slanted
Down the green athwart a cedarn cover!
A savage place! as holy and enchanted
As e'er beneath a waning moon was haunted
By woman wailing for her demon-lover!

The story "Wireless" is to be found in the volume of short stories, "Traffics and Discoveries." The lines of course are from the fragment, Kubla Khan, by Samuel Taylor Coleridge, one of England's three immortal Lake Poets; and best known by his oft clerically quoted "The Rime of the Ancient Mariner" with its moralizing finale.

And Kipling says particularly the last two (of the five lines):

As e'er beneath a waning moon was haunted
By woman wailing for her demon-lover!

I might better heed the advice of Rabelais, who first saw the light of day when our great western continent was to dawning modern Europe still in swaddling clothes, for he said: "Spare your breath to cool your porridge." Instead I might ask you to read. "Read not to contradict and to confute, nor to believe and take for granted, nor to find talk and discourse, but to weigh and consider" (1).

"By woman wailing for her demon-lover!"

Does not that very line savor of mental illness—the closest if not the only link between our physical and our moral woes? The Acts of the Apostles V:16, "There came also a multitude out of the cities round about unto Jerusalem, bringing sick folks and them which were vexed with unclean spirits: and they were healed every one." That verse of scripture I took for a motto when for two months this autumn I was on the staff at Ward's Island (under the mammoth Hell Gate Bridge), New York, at the Manhattan State Hospital of more than 6,000 insane.

When a young man studies medicine, and when the so-called average layman reads of medicine or hears it from the public platform he imagines himself the victim of all the diseases and all their harrowing and pitiable complications. When one hears hell fire and brimstone preached, yea, hurled at his very head he generally feels not unlike the proverbial Quaker who said to his wife: "All the world's queer excepting only thee and me, and even thou art a little queer at times."

Insanity (2) briefly is psychological abnormality in speech and conduct to such a degree that the individual can no longer adapt himself efficiently to his environment. It is much more frequent in civilized countries, ranging in frequency from one in three hundred to one in five hundred of the population. It is now (1908 and still is in 1920) slowly increasing relatively to the population, but it is more probable that this increase will before long cease and the tide set in the other way through the influences of a better knowledge of how to live.

There is rather more insanity in urban than in rural populations, and there would be still more if the cities did not draw the best blood of the country to themselves. Urban life is certainly of itself more productive of insanity than rural life. Certain callings furnish relatively more insane than others. Among the educated classes it is no doubt the artistic pursuits, including the dramatic. Among the mechanic and artisan classes it is railroad men and engineers, workers in the dangerous industries, such as lead, aniline dyes and mercury.

Many cases of insanity are due to the continued indulgence in morbid mental habits, the cultivation of moods and the unbalanced development of the different instincts such as social, sexual and religious. The Gospel according to St. Luke V:33: "Then went the devils out of the man, and entered into the swine (feeding on the mountain): and the herd ran violently down a steep place into the lake, and were choked." And again, Mark X:25: "It is easier for a camel to go through the eye of a needle than for a rich man to enter into the Kingdom of God."

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How can we connect up these things? Not blindly, but with a judicial use of the imagination. ". . . There is (3) a body terrestrial and a body celestial; the body celestial floats very near us in the liquid atmosphere of Stevenson's best work." "For men (4) do not live by bread alone: the mind needs play as truly as it needs work; the spirit must have its outing: the realities of life must be compassed about with spiritualities. One of the deepest sources of the power exercised over the imaginations and lives of vast numbers of people by the sixty-six books which make up the Bible has been the rootage of this noble literature in life, its profound significance as a story of spiritual experience. And it may be noted that it contains some of the most beautiful and striking short stories in the whole range of literature. The stories of the Patriarchs are notable, not only for narrative interest of an unusual kind, but for strong, distinct and impartial character drawing, while the tenderness and pastoral beauty of the idyl of Ruth have given it a place by itself in the literature of the world.

Dr. R. S. MacArthur, of the Calvary Baptist Church of Seabreeze, Fla., says in his magnificent sermon, "What Think Ye of Christ?" "No mere human thinker has ever approached the Sermon on the Mount. But in pure spirituality of thought our Lord surpassed it in His last address to His disciples. This address bears ineffacable marks of His supreme divinity and His absolute deity."

Although this is amply sufficiently convincing for me, let us remember that we do not have to believe all we hear or even all we see, in spite of the old Latin adage: Videre est credere. Descartes (5) in the First Meditation tells us: "All that I have up to this moment accepted as possessed of the highest truth and certainty, I received either from or through the senses. I observed, however, that these sometimes misled us, and it is the part of prudence not to place absolute confidence in that by which we have been even once deceived." When one has clearly grasped the active mental element in all perceptions it is easy to see how illusions or false perceptions arise.

The (6) story is told of an Eastern man who had been frequently deceived in his estimate of distance to the great amusement of his colorado host, that on one occasion, when they came to a little rivulet a foot or two in width, the Eastern man sat down on the bank and began to pull off his shoes and stockings, preparatory to wading. His friend expostulated with him and asked why he did not jump across. "How do I know that it isn't a quarter of a mile across?" was his reply.

In Henry Ford's libel suit against the Chicago Tribune in which it was conclusively demonstrated that he was practically uneduated and but little above illiterate, that great Chicago daily called upon an eminent psychologist for expert testimony. Mr. Ford in turn called upon the Episcopal Archbishop of Michigan. That gentlemen, whose name escapes my memory, stated from the witness stand that not only some of Henry Ford's but some even of Jesus Christ's utterances were exaggeration for the sake of emphasis.

"It is easier for a camel to go through the eye of a needle," however, means through one of the small pedestrian gates in the city wall, and not through the eye of a sewing needle. As to the swine receiving the devils and being drowned in the lake; almost anyone knows that a pig can swim but cuts his throat in so doing. Why should not an eminent theologian, biologist or psychiatrist be able satisfactorily to explain the transposition of the devils? And if not, do we not know anyway that we have to fall back upon faith ultimately?

Abraham incoln said he was never weary when handling a thought, till he had bounded it north, south, east and west. Yet poetry is thought in flower; goodness is thought in fruit. Out of the noise and heat of the workshops one may have heard the cry but a few brief years ago:

O men with mothers and wives!
It is not linen you're wearing out
But human creatures' lives!
Stitch—stitch—stitch
In poverty, hunger and dirt.
Sewing at once with a double thread,
A shroud as well as a shirt!
O God, that bread should be so dear,
And flesh and blood so cheap!

"An (7) infinite joy is lost to the world by the want of culture of this spiritual endowment. The greatest truths are wronged if not linked with

beauty; and they win their way most surely and deeply into the soul when arrayed in this their natural and fit attire. Of all luxuries this (the sensibility to the beautiful) is the cheapest and most at hand. . . The beauty of the outward creation is intimately related to the lovely grand interesting attributes of the soul. It is the emblem and expression of these. Matter becomes beautiful to us when it seems to lose its material aspect and approach spirit."

Now for the meat in the cocoanut. Let us for a space at least be confined to prosaic quotations, and cold statistics and hard facts. Daniel Webster said: "Whatever makes men good Christians makes them good citizens." And James Russell Lowell: "Before men made us citizens 'great nature made us men.' Publius Syrus in 42 B. C. said: "Good health and good sense are two of life's greatest blessings." Socrates and also Diogenes each said that he was not an Athenian or a Greek but a citizen of the world. Civis (8) Romanus sum: I am a Roman citizen. This was the proud boast of enfranchised citizens of Rome. It was also spoken by the greatest perhaps of all human writers and orators, the apostle Paul. Caracalla in A. D. 213 destroyed its special meaning by extending the privileges of citizenship to all the subjects of Rome. There is a famous passage in Cicero's sixth oration against Verres, where he instances the case of Publius Gavius, whom Verres had caused to be beaten with rods in the forum of Messina: "No groan was heard, no cry in all his pain, and between the sounds of the blows except the words: 'I am a Roman citizen.'" A memorable application of the phrase in modern times was made by Lord Palmerston in the House of Commons, June 25, 1850. The foreign policy of Lord John Russell's administration was under discussion. Palmerston, the Secretary for Foreign Affairs, upheld that policy especially in regard to the protection afforded British subjects, and challenged the verdict of the house on the question "whether as the Roman in days of old held himself free from indignity when he could say civis Romanus sum, so also a British subject, in whatever land he may be, shall feel confident that the watchful eye and strong arm of England will protect him against injustices and wrong."

Thomas Jefferson says of George Washington: "He was incapable of fear, meeting personal dangers with the calmest unconcern. On the whole his character was in the mass perfect—never did nature and fortune combine more completely to make a man great." Although as we all know Washington had smallpox in his youth, yet he lived in wellnigh perfect health to the age of sixty-seven when he was suddenly taken off by pneumonia.

Henry Watterson says of Grant: "He was the embodiment of simplicity, integrity and courage; every inch a general, a soldier and a man." Although I have known in Boston instances of Italian babies under six months of age developing fatal alcoholic cirrhosis of the liver from the wine their parents gave them, yet General Grant's reputation as a hard drinker as very humourously exploited in Drinkwater's play, "Abraham Lincoln"—does not seem to have hurt him any.

Lincoln himself stands out in the history of our nation midway in time and fame between one predecessor and one successor; Washington or Jefferson on the one hand and Roosevelt or Wilson on the other. He was cut off in his prime before a complete achievement. Contemporaneous with him was one man whose mere achievements from first to last stamp him in my mind as equalled by only one military leader; that is by John Churchill, the Duke of Marlborough, the general who never lost a battle or failed to take a town. And the name which stands alone in American history as a superman of military genius is that of "Stonewall" Jackson. He died at the early age of thirty-nine. Although he fought to dispel the union and to continue slavery, yet the first contribution to his monument was made in 1887 by the negro Baptist Church of Lexington, Va. General R. E. Lee spoke his fittest eulogy after hearing that he had been wounded at Chancelorsville: "Could I have dictated events I should have chosen to have been disabled in your stead."

On the list of great generals in world history stand out two who, if any reliance can be placed in the history of medicine, are definitely authenticated as having had epilepsy. These two are Julius Caesar and Napolon Bonaparte. It is also generally known that Mohammed was an insane epileptic.

Christopher Marlowe at twenty-nine was killed in a tavern brawl in the year 1593. He it was who in spite of his untimely death created English tragedy anew. He was the first great English dramatist and he prepared the way for Shakespeare. Of our own who died by violence yet not on the field of battle may be mentioned Alexander Hamilton who was killed in a duel with Aaron Burr. Hamilton was only forty-seven.

Examples multiply of those who while still in the prime of life have been cut down by the grim reaper. It is rather a fair conclusion that longevity is not an essential accompaniment to fame or to good citizenship. Yet would not the world be the loser had not the Great Creator spared Michael Angelo to do much of his best work at past three score and ten? And Bryant among our own poets, even though he wrote Thanatopsis at seventeen? Perhaps the greatest poet who has written since lived the immortal bard of Avon, wrote his "Crossing the Bar" at eighty. But by contrast, which of you has not read that pathetic tribute beneath the bronze statue in the New York Metropolitan Museum to the greatest American writer of both prose and verse? Who wrote "The Pit and the Pendulum," and that only one quite perfect American short story, "The Fall of the House of Usher," "The Mask of the Red Death," "Anna Bell Lee," "The Raven," "The Bells," that most perfect example of onematopoeia in any tongue? He it was who in his fame is truly immortal. And he died just short of forty, did Edgar Allen Poe.

Among celebrities who have suffered long with some disabling disease, not every one knows that Sir Walter Raleigh so well known to every school child, had infantile paralysis. Who wrote?

Even such is time that takes in trust
Our youth, our joys, our all we have,
And pays us but with earth and dust;
Who in the dark and silent grave,
When we have wander'd all our ways,
Shuts up the story of our days;
But from this earth, this grave, this dust,
My God shall raise me up, I trust.

—Sir Walter Raleigh.

"The great white plague" counts among its victims Locke, Rousseau, Kant, Goethe, Shelley, Keats, Walter Scott and the immortal Robert Louis Stevensen. Even (3) as a babe R. L. S. was a marvel. He was calling people by name before the average baby had cut eight teeth. But this went with a weakness of the chest and a susceptibility to cold inherited from a sprightly, girlish mother who thus conditioned on its physical side the most personal genius in our literature."

Louis was seven when the Stevensons tried once more to fly from his disease. They simply took it with them as inevitably as the family Bible Koch's discovery of the tubercle bacillus (1882) was still in the future. The Stevensons had never heard of phthisis as a bedroom disease. His hacking cough is now as much a part of the history of literature as Carlyle's dyspepsia or Hilton's blindness.

Under the wide and starry sky
Dig the grave and let me lie:
Glad did I live and gladly die,
And I laid me down with a will.
This be the verse you grave for me:
Here he lies where he longed to be;
Home is the sailor, home from sea;
And the hunter home from the hill.

And he died at forty-four.

While upon tuberculosis let us take courage; for the mortality in England back in the seventies was 219 in each one hundred thousand, while in the first decade of this century it was 117. It has dropped nearly fifty per cent in forty years. On the other hand pneumonia, that "Captain of the Men of Death," takes toll ever so often and discourages the most sanguine. We know too well that it was wellnigh a quarter of a million Americans who made the supreme sacrifice, about half to wounds and half to disease. And within those two dread years a full quarter of a million of those who did not wear the khaki or the blue were made silent prisoners by the "Captain of the Men of Death."

Yet we know what has been achieved in the combat against infectious disease. Where on our continent is typhus fever, bubonic plague, yellow fever? And who now dreads smallpox, or even typhoid?

Malaria will be the next to go. And the Life Extension Institute of New York is beginning to show the intelligent American that he can help add a decade to our average strenuous life by

heeding the early danger signals of the wear and tear diseases.

This is well exemplified in the life of one really great modern American. Young Theodore was a sickly child, greatly troubled with asthma and extremely nearsighted. By frequently living in the open air and persistance in strenuous exercises, he not only threw off the maladies of his chilhood but developed a magnificent physique able to respond for many years to the exhausting calls he made upon it. And there died at the age of sixty Theodore Roosevelt, a man of extraordinary powers, and to those who knew him, a man of most attractive character and qualities. Doubtless he was sometimes gravely misunderstood; his mental processes were so abnormally rapid that he often seemed to act with little or no reflection, when he had in fact, considered the question at issue most thoroughly and conscientiously, although perhaps in one-tenth of the time which would have been needed for the purpose by an ordinary man. Moreover, the strength of his convictions and the vivacity of his speech and manner confused and frightened timid men or those who knew him but slightly, and led them to think of and describe him as arbitrary and overbearing. He was, in truth, somewhat exceptionally anxious for information, assistance and advice from those for whom he felt respect and in whom he had confidence; but only one who was not afraid of him could fairly judge or really like him. He had the stern sense of duty, the lofty purpose, and the strict morals of puritanism, without any of its too common hypocrisy or affectation of virtue. He detested falsehood in every form and shams of every kind, and throughout his long and stormy career as a public servant and a political leader, always fought fairly and in the open, and was restrained by the instincts of a gentleman and the scruples of a man of honor. It were needless to speak of his patriotism or his courage—the events of his life sufficiently attest these—but it is the firm belief that his profound wisdom, the unselfishness of his devotion to duty and his immense usefulness to his country will be more clearly recognized and more highly esteemed by each successive generation.

I have attempted to hark back to the time of our Saviour and to run forward through the centuries, summoning for your consideration the lives and works of many men who have helped to make history. In all conscience it probably may be said that of all those who have died young or have borne a thorn in the flesh, there have appeared before you this evening brief glimpses of an appreciable proportion.

Small need is there for me to dig down into the dregs of humanity and bring forth to display before you the loathsome of them who have made poor citizens or who never could become citizens at all because of an insurmountable deficit in health—physical, mental or moral. Anyone reared in the medical atmosphere of Boston or New York could multiply such examples by the thousands; in reality they exist in hundreds of thousands.

Ladies and gentlemen—good citizens all—I have spoken of good health. I have spoken of good citizenship. The correlation is quite obvious. May I say in closing—for I am really not a New Yorker but a South Carolinian—here's a health to "you all."

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The next annual meeting of the Tri-State Medical Association will be held February 21-22, 1922, at Norfolk, Va., with headquarters at the Monticello Hotel.

Original Communications

THE CYSTOSCOPE IN THE FIELD OF UROLOGY

By W. C. Stirling, M.D.

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In 1807 Bozzini of Frankfort devised a metal tube reflector and candle for bladder examination. Various other men worked along the same line until 1877, when Nitze first applied an incandescent light to a real cystoscope. Since that time various improvements and refinements have been made on the cystoscope, which now permits various examinations and operations to be made on the genito-urinary tract.

The technique of cystoscopy with which every urologist is familiar is gained first by having a thorough knowledge of the principles on which the indirect or direct cystoscope is constructed as well as knowing the anatomy and normal appearance of the interior of the bladder. This is gained by constant practice in seeing the normal as well as the pathological picture of the interior of the bladder. Having mastered these details, cystoscopy and ureteral catheterization becomes very easy and only requires a very short time except in rare cases.

In pathological conditions of the bladder one is enabled to see and determine the extent of the condition. Vesical calculi can be accurately diagnosed as to size, number, location, shape, mobility and whether situated in a diverticulum or not, the advisability of lithlopaxy and removal without a cystotomy. The urologist should be familiar with the various types of calculus seen in the bladder and be able to recognize the more common ones such as the phosphatic, uric acid and oxylate stones. The X-ray fails to reveal the presence of bladder stones in quite a large number of cases, more so than in the kidney, so that a negative roentgenogram does not rule out a stone where as the cystoscope will show it in all cases except where it is situated in a diverticulum or in conditions which will not permit the cystoscope being introduced such as hypertrophy of the prostate, urethral stricture, etc.

Bladder tumors can be readily diagnosed, the type determined and advisability of fulguration, radium therapy or open operation arrived at. The records show a large percentage of secondary implantation of excised tumors in the incision so that in benign tumors of the bladder fulguration is indicated. In malignant conditions radium can be introduced through a specially devised cystoscope and applied with success to many of these types of tumors. Radium needles have also been used in cases inoperable.

All cases of prostatic hypertrophy should be cystoscoped prior to operation if not contra-indicated and the various tests be made such as thalein excretion, amount of the residual urine, presence or absence of a diverticulum or calculus determined, as well as the size, shape of a prostate, whether a medium bar enlargement is present. Freyer of London says the only contra-indications to cystoscopy are impending uremia, great thirst, rapid pulse and profound intoxication.

With the cystoscope one can diagnose such conditions as leucoplakia, malakplakia, vesical T. B. or the essential ulcer as described by Kretchmer. The condition of the ureteral orifices can be seen and any pathology such as blood issuing from the mouth of the ureter, ulceration around the mouth of the ureter, small calculi projecting from the orifice or any abnormality of the shape of the ureteral orifice seen. It has been the author's experience to see several cases of double ureters on one side. By means of the wax bulb catheter one is often enabled to make a diagnosis of ureteral calculus as well as a stricture. Again the X-ray may fail to show a small uric acid stone which usually would be found upon passing a catheter to the kidney. By passing a catheter up to the stone and injecting sterile oil,

*Read at the Pinehurst meeting of the N. C. Medical Society, April, 1921.

apothesine or papavarine a stone can be made to pass in a large percentage of cases where the X-ray shows it to be two cmm. in diameter or less. An open operation is not justified until this has been tried several times. The reports of various men using this method bears out this statement. Since the non toxicity of sodium bromide has been worked out by Weld as a medium in pyelography a routine pyelogram can be made in all suspicious cases and where a shadow shows in the upper right quadrant a ureteral calculus can be differentiated from cholelithiasis, pleboliths, abnormalities of the spinal column, etc., as well as outlining the renal pelvis in suspected tubercular caseation hydronephrosis and nephroptosis.

Recent study by Bumpus and Meisser of the Mayo Clinic as to the cause of kidney infection has changed the general conception of these infections, more especially pyelonephritis. Infections of the pelvis and parenchyma of the kidney are often due to focal infections, especially the teeth and tonsils which harbor the infecting organisms which they have found to be certain strains of the streptococcus and in some cases staphylococcus from infected tonsils. In cases of pyelonephritis coming in for treatment they carefully eliminate all foci of infection, paying particular attention to the teeth and tonsils. They have injected pus from one of these foci into a rabbit or guinea pig and have produced the same pathology in the kidney alone, and then reinjected pus from this kidney into a second animal with the same results, then pus from the second into a third and fourth animal and as a result the infection appeared wholly in the kidney, the other organs being negative. This has definitely proven that under certain circumstances many strains of the coccus group have an elective action, as Rosenow has proven with the selective action of the streptococcus on the appendix. Simple lavage of the kidney will not permanently cure these cases because the source of the trouble is not in the kidney but in one of the sinuses, teeth or tonsils.

Braasch of the Mayo Clinic places great importance in pyelograms and arrives at most of his diagnosis of tuberculous kidney by the pyelogram together with bladder findings and centrifuged sediment stain, placing very little if any confidence in guinea pig inoculation which he says at best are unreliable. He describes three types of tuberculous kidney and can usually diagnose these types by the aid of a pyelogram.

In surgical conditions of the kidney the cystoscope is indispensable combined with roentgenography and the renal function tests. Together with the history and physical findings we are able to determine the presence of a unilateral or bilateral infection, whether both kidneys are functioning, and whether one kidney can carry on the work of both should a nephrectomy be indicated. By means of the excretion and retention tests the total function of the kidneys can be arrived at and advisability of an operation can be determined.

In any suspected infection with elevation of temperature and pain occurring in the abdomen pyelonephritis must be ruled out, as the report of a thousand autopsies made in a hospital center at Beaune, France, twenty per cent of the cases showed pyelonephritis which had not been recognized before death. This in itself should keep us constantly on the lookout for these infections. In such conditions as twisted ovarian pedicle, appendicitis, salpingitis, cholecystitis have been frequently confused with pyelonephritis and even operation performed on the strength of such diagnosis which failed to cure the patient and upon passage of a ureteral catheter the real trouble was found to be in the kidney.

Summary.

1. Cystoscopy is acquired only after gaining a thorough knowledge of the genito-urinary tract.

2. Such bladder conditions as tumor, calculus, diverticulum, prostatic hypertrophy, tabetic atony of the internal sphincter can be readily diagnosed with a cystoscope.

3. In surgical conditions of the kidney cystoscopy combined with ureteral catheterization and the retention and excretion tests is invaluable in arriving at a diagnosis.

4. In tuberculosis of the kidney the determination of bilateral involvment can be made and whether the other kidney can carry on the function should nephrectomy be indicated.

5. In treating pyelonephritis the cystoscope with ureteral catheterization is invaluable. As simple lavage of the kidney pelvis will not cure these cases but all foci infections must be eliminated.

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SYMPATHETIC OPHTHALMIA*

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In fifteen years' practice as an ophthamalogist I have only had one case. I think it quite rare, but perhaps my few cases are due more to the fact I make it a hard fast rule to enucleate every eye whose damage is so extensive as to destroy useful vision provided the ciliary body has been involved, than to the rarity of the disease.

Sympathetic ophthalmia, like tetanus, is fairly easily prevented when due to traumatic injury, but very serious when expectant and not vigorous prophylactic measures are resorted to.

The case I shall report refused to accept my advice and consent to enucleation until the other eye had been involved at least two weeks. The inflammation in the well eye usually begins between the tenth day and three months, though there are cases reported beginning before the tenth day and others reported as long as fifty years, the latter I do not believe are due to the old injury and frankly believe should have been classed under the head of idiopathic inflammation.

Under the head of etiology we find as much variance of opinion as to time. It is most frequently due to penetrating wounds more especially in the ciliary zone. These wounds usually are infected, it has been reported, after cataract operations done under the strictest septic technique, after Mules operation, after fragments of percussion caps entering the eye ball, after tattooing of the cornea, after sarcoma of the choroid, after enucleations, after bullets lodging in the eye ball, etc. In fact, almost all injuries of the eye have been accused of being the cause of sympathetic ophthalmia.

Transmission of Sympathetic Ophthalmia.

There are so many theories advanced I shall very briefly name a few:

1. The old theory of McKenzie (migration theory), that is, the retina of the injured eye being in a state of inflammation which is carried along the optic nerve to the chiasm and by the other optic nerve to the retina of the well eye. This theory was easily disproved.

2. The theory that the inflammation was transmitted through the ciliary nerves.

3. That the disease was transmitted from eye to eye through the blood vessels.

4. The theory of metastasis that the cause is a micro-organism and is transmitted as in metastatic sarcoma.

5. Toxin theory.

6. I suppose should be termed the theory of anaphylaxis. This theory was most ably championed in a thesis read by Prof. A. Elschnig of Prague, Austria, before the American Academy of Ophthalmology and Oto-Laryngology at Niagara Falls in 1912. Professor Elschnig claims "that specific antibodies are formed; for example: If one injects into a guinea-pig a small amount of horse-serum, the guinea-pig reacts to the injected horse-serum by forming specific antibodies. When this process of antibody formation is completed, some twenty days later, if we again inject intravenously a small quantity of horse-serum, the animal exhibits the symptoms of shock, which has been termed anaphylaxis, and dies, while the same quantity in a guinea-pig that had not been previously injected would produce no appreciable effect. Besides this general anaphylaxis, there is a local one such as the local reaction after tuberculin injection." He elaborates on this by making specific tests with eyes alone, then carries it a step farther and makes the same tests with corneal tissue, thus making out a strong case for his theory.

"So should an injury, whether directly through the injury itself, the foreign body or the introduced micro-organ-

*Read before the North Carolina Medical Society, Pinehurst, N. C., April 26, 1921.

isms, an eye becomes inflamed and uveal tissue is damaged; the uveal tissue and pigment is resorbed in antigenic form and antibodies are set free in the blood. These antibodies react with the remaining normal uvea of the injured eye and likewise with the uvea of the second eye rendering them hypersensitive or sensitizing them. So just as the anaphylactic shock occurs in the guinea-pig receiving the second dose of serum, so in the eyes and especially the well eye whose uveal tissue had been sensitized and the anaphylactic shock occurs and we have the sympathetic shock, which is sympathetic inflammation."

This theory is by far the most plausible of any yet I have read, but if both uveal tracts are sensitized why should the shock be always greatest in the uninjured eye? Then, too, how could he explain why the occurrence after, say, ten to twenty years had elapsed since these antibodies were formed? This, like all the other theories, is too easily exploded. The more we study the disease the more we are convinced we know but very little about it. I have as one of the occulists for the white and colored blind schools located in Raleigh, seen quite a number of entirely lost eyes from sympathetic ophthalmia but I have never had but the one case in my practice. Report of case:

Miss E. G., 18 years, white girl, cut with pocket knife April 9, 1920, in right eye, cut through upper lid incision slightly to outer side of eye, cut extended through cornea to outer side of pupillary area incision entered cornea at upper corneo scleral junction, and cut through cornea and iris, extending to corneo scleral junction below, anterior chamber filled with blood, extravasation of blood below and inward in conjunctiva. The edges of incision were so nicely coapted I decided to thoroughly cleanse eye, drop atropin solution and argyrol in, put light dressing on eye and wait developments. This line of treatment was kept up until April 23, when eye was so much improved patient was allowed to go home and treat eye herself. May 8, patient was seen and other eye showed signs of irritation slight circum corneal congestion. Patient was seen two or three times within ten days and enucleation of injured eye advised, but patient refused. However, all the symptoms very rapidly grew worse, eye very badly inflamed, sight gradually growing worse, irido cyclitis, pupil contracted, pain over eye, iris bound by adhesions. On May 22 patient gave consent for injured eye to be removed. This was done and no stitches put in. Patient put to bed, given proto iodide of mercury, and 10 grain doses of salicylate of soda every four hours, atropin four grains to ounce every four hours, hot compresses and dark room, good eye gradually grew worse. This treatment was kept up for several weeks, all the time the sympathetic ophthalmia very gradually growing worse. The mercury and sodium salicylate were discontinued and benzosalin given in ten grain doses, within ten days after beginning the benzosalin the eye was very much improved; by August 1 the eye seemed entirely well. The benzosalin was discontinued and eye within less than a week was red and showed it was again in a precarious condition. The benzosalin was at once begun again and the belladonna again given in full quantity. Again in October the eye appeared to be well and the benzosalin stopped and again the eye flared up and we went back to the benzosalin a third time. In November, the benzosalin was discontinued to be recommended in less than ten days. In the meantime, I had discovered the patient had some old toxic tonsil stumps and had advised they be removed, but met with a refusal. When for the third or fourth time I was forced to return to the benzosalin, I plainly told the patient to keep on taking the benzosalin the rest of her natural life or let me remove the diseased tonsil stumps. This was done on December 11. On December 20, eye apparently well. All medicine stopped. Saw patient February 23, eye slightly red. Patient gave history of reading for four consecutive hours and eye grew worse. Pupil had nearly come back to normal from the atropin but was slightly oblong showing some adhesions from the plastic lymph and long dilatation from atropin. Again we returned to the benzosalin and atropin. Saw patient again on March 2, eye practically well, vision 20/20. All medicine stopped. She has been apparently well ever since and uses her eye freely for reading, etc.

The interesting point in this case is the good results of the benzosalin and the fact we could not get this eye to stay well until the diseased tonsils were removed.

The fact that the eye was so persistent in its returning to the same inflamed condition caused me to suspect there was a focus of infection somewhere that acted as a feeder to this already weakened member, and then, too, after the foci of infection was removed and the eye remained quiet caused me to feel that the foci were (to put it the mildest) at least a hindrance in getting the eye well.

Now, do not think I am trying to convince you gentlemen that sympathetic ophthalmia is wholly due to focal infection. Yet, I do firmly believe that many eyes have been lost because of the activities of focal infection. The modus operandi of focal infection I can't explain, why it will select an eye one time, a nerve another, a joint another, a kidney another, etc. Yet, we think we know they do. The treatment of sympathetic ophthalmia has been included in my case report.

DIFFERENTIAL DIAGNOSIS BETWEEN PULMONARY TUBERCULOSIS AND HYPERTHYROIDISM*

By Jas. H. Smith, M.D., Richmond, Va.

That these two conditions may at times be confused hardly requires proof other than is furnished by experience. The purposes of this paper are, especially, to emphasize the direction in which the liability to err is greatest, the reasons therefor, and some points in differential diagnosis.

The instances of tuberculous pathology of the thyroid gland itself do not particularly concern us at this time. This may occur as a complication of pulmonary tuberculosis, and occasionally as a primary condition.

I think it could be established by investigation that there is a distinctly greater liability to make a diagnosis of hyperthyroidism when the condition of primary importance is pulmonary tuberculosis, than there is to make the opposite error. Reasons that may be given for this are:

1. In the first place, clinical tuberculosis is more common than clinical hyperthyroidism.

2. The physical signs of hyperthyroidism are more superficial and therefore more easily observed.

3. The physician is more reluctant, usually, to make a diagnosis of tuberculosis.

4. Lastly, may be cited experience in actual practice.

It is in female patients that this error in diagnosis is more frequently made. The familiarity of the profession with the comparative rarity of hyperthyroidism in males leads to greater care in reaching the conclusion that this condition is the cause of symptoms in a male patient.

It may be well at this point to restate the problem a little differently. Pulmonary tuberculosis and hyperthyroidism usually present themselves as separate clinical entities, but they may coexist. Though the etiology of hyperthyroidism is still obscure, it hardly admits of contradiction that overactivity of the thyroid may be in some instances directly attributable to pulmonary tuberculosis. In the latter situation it is highly important to determine the relative degree of each.

A brief enumeration of the features common to the two conditions will make it immediately apparent how confusion may arise. The general appearance of the patient, including as a rule a naturally slight physique, having suffered in addition more or less emaciation, with perhaps some evidence of nervous tension, forms a background shared almost equally by the two conditions. In either it is frequent to see a tendency to excessive perspiration and axillary dripping under examination. Night sweats, while more definitely associated in the medical mind with tuberculosis, really have no significance other than of a toxemia or weakness, and may and do occur in hyperthyroidism. The weakness and nervousness of tuberculosis may find expression in a tremor of fine quality not unlike that seen in hyperthyroidism. An increased pulse rate is characteristic of both conditions, and while in a large series of cases we would expect to see the pulse rate average higher in the thyroid cases, and the temperature average lower, yet there is, of course, a considerable range for the pulse rate in which either diagnosis would furnish a satisfactory explanation; while on the other hand the thyroid cases not infrequently show a mod-

*Read before the Halifax County, North Carolina, Medical Society, at Weldon, N. C., July 6, 1921.

erate rise of temperature.

The patient may complain of cough. If expectoration is absent or only slight, the cough may be explained as a pressure effect of the enlarged thyroid when it is really due to pulmonary tuberculosis. Even when it has the brassy quality particularly suggestive of pressure on the recurrent laryngeal nerve, tuberculous involvement of the bronchial nodes in the mediastinum may be the cause rather than the thyroid.

The inappropriateness of the name "exophthalmic goiter" in view of the frequency with which there is neither exophthalmos nor goiter, has been so generally insisted upon that we have become quite complacent on occasion in making a diagnosis with one of these symptoms lacking. There is no fault to be found with this. It cannot be denied, however, that if we do not insist on the presence of a goiter, it is easier to overlook tuberculosis as the real cause of the existing symptoms. Again, we have all seen people whose eyes on first impression suggested exophthalmic goiter, only to learn that they are "naturally pop-eyed" and show no symptoms whatever of overactivity of the thyroid.

Various symptoms of indigestion are liable to present themselves in either condition. In recent years the secondary character of indigestion in most cases has come to be generally recognized. Even in literature designed by public health boards for lay reading we find indigestion listed as one of the early symptoms of tuberculosis. On the other hand recent medical literature is flooded with articles emphasizing the frequency of digestive symptoms as expressive of disorder of the endocrine glands, especially the thyroid. It is plain, then, that here again is a common meeting ground for the symptoms of the two diseases.

What has been said pertains to symptoms and signs. Crile goes even further when he states with regard to pathology that, even at autopsy, the lesions—barring the tuberculous focus itself—may be so nearly identical as to baffle differentiation.

It is tempting to pursue the parallel further into what is perhaps the most fascinating field of all, namely, physiology or functional pathology. A great deal has been written to show that the symptoms of tuberculosis are to a considerable extent explained by the effect of the disease on the vegetative nervous system, either an immediate effect of the tuberculous toxin, or an effect obtained through a primary action of the tuberculous toxin on the thyroid, thus influencing the involuntary nervous system. On the latter phase of this problem, the interrelation between the thyroid and the vegetative nervous system, an even greater amount of work has been done (3). But this is a phase of our subject that presents many questions still unsettled, and is not immediately necessary to our present purpose.

Now, if it has been sufficiently brought out that, clinically, pulmonary tuberculosis and hyperthyroidism resemble each other closely, that they may be present coincidently, and that the coincidence may at times be explained as a relationship of cause and effect, then, for the sake of brevity, instead of discussing the differential diagnosis, it may be well to consider what constitutes reliable evidence of the presence of the two diseases separately or jointly.

1. A repeatedly positive tuberculous sputum establishes the diagnosis of pulmonary (or respiratory) tuberculosis.

2. Definite physical signs suggestive of tuberculosis must be accepted as diagnostic until they can be otherwise explained, and this is not often possible.

3. Positive evidence based on stereoscopic roentgen-ray study in the hands of a competent roentgenologist must receive attentive consideration no matter how scant may be the physical signs.

4. A history of pleurisy with serous effusion, or prolonged symptoms in early life definitely referable to the chest, especially hemoptysis, calls for unusual caution in eliminating tuberculosis.

5. A recent influenzal attack may make more difficult the diagnosis. It confuses the physical examination, as also sometimes the roentgen-ray study. Furthermore, it is not infrequently followed by a train of symptoms best indicated by the term "effort syndrome," which may be rather easily misinterpreted as symptoms either of tuberculosis or of hyperthyroidism.

6. On the other hand, if the sputum is persistently negative, the physical signs normal, and competent roentgen-ray studies reveal no signs of activity

and no excess of old scar tissue, or healed tubercles, then, as between the two diagnoses, the evidence is in favor of hyperthyroidism.

Until recent years no one could claim that we had any accurate measure of the physiological activity of the thyroid. The best single index was, perhaps, the pulse rate. More recently, chiefly through the efforts of Benedict, the principles of indirect calorimetry by which the basal metabolism of the individual may be calculated have been put on a reasonably practical basis for clinical purposes. The final evaluation of this method has yet to be made.

Its present status may perhaps be fairly summed up by saying that most clinicians who have used it have found it of very definite help in differential diagnosis, in determining the severity of the thyroid condition, and in measuring the result of therapeutic practices. Some, indeed, go so far as to say that, like certain other instruments of precision, it has nearly served its purpose in enabling us to correlate with its results other data more easily obtained, thus giving a basis for interpretation of the other data so as to make clinical calorimetry unnecessary in the average case. I refer specifically to the parallelism between the pulse rate and basal metabolism. There is, I think, being established in the majority of cases a parallelism quite close. But the exceptions are numerous enough to make the statement too broad when we say the method can now be discarded. On the contrary I feel that we are still in that early stage when we should be careful, rather, to avoid placing too much reliance in it to the exclusion of other data. For I think if we accept the figures without question, not realizing the sources of error, we are apt in some cases to be badly misled.

In interpreting the results of the basal metabolic determination the pituitary gland, pernicious anemia, menstruation in women, occasionally diabetes, and probably other factors as yet not appreciated, have to be borne in mind. In none of these is the basal metabolism so markedly accelerated. But as the hyperthyroid cases approach the border line group the chances of error are increased. As to the differential diagnosis between tuberculosis and hyperthyroidism, it has been stated that the basal metabolism is increased ten per cent for each degree of temperature (Crile), and if the case is febrile, allowance must be made for the effect of the temperature. The certainty derived from the metabolism test is in proportion to the decisiveness of its results in a given case. If in addition to a definite increase in the basal metabolic rate there is a manifest enlargement of the thyroid and other classical symptoms, including exophthalmos, the presence of thyroid disturbance is hardly to be questioned.

I will not prolong the paper by case reports. It would be easy to cite a number of cases in which there was moderate enlargement of the thyroid gland, increased pulse rate, loss of weight and nervousness, in which study of the chest revealed active pulmonary lesions. These cases are fairly common. They occur chiefly in young females. In addition, we sometimes see cases treated by radical methods for hyperthyroidism, and shortly afterwards exhibiting advanced tuberculosis. I have records of a case, a young woman, on whom partial thyroidectomy was done in 1911. Eighteen months later she was recognized to have active pulmonary tuberculosis, and it has been an uphill fight since. She improved a great deal immediately after the operation, though I do not know what was the condition of the chest at the time the operation was done.

The case of another young woman was even less happy. Partial thyroidectomy was done in 1918. In June, 1919, she had advanced tuberculosis and died within a few months.

The conclusions to be drawn seem to be these:

Hyperthyrodism and tuberculosis may exist coincidently, and a moderate degree of the former may be an expression of the latter.

The general measures adapted to the treatment of tuberculosis are in the main favorable to controlling mild hyperthyroidism, and nowadays there appear to be further possibilities in the treatment of hyperthyroidism without operation by means of the roentgen ray and radium.

While no treatment so far evolved can be said at this time to supplant operation in properly selected cases of hyperthyroidism, when tuberculosis is recognized conservatism in the man-

agement of an over-active thyroid is strongly indicated.

Finally, it is always well to consider the possibility of tuberculosis in making a diagnosis of hyperthyroidism.

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REPORT OF CASES OF RUPTURED ULCER OF DUODENUM AND STOMACH*

By

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In reporting these cases I wish to bring out a free discussion whereby we may all be benefited. When I first saw a case of ruptured ulcer ten years ago there was so little literature on the subject that I feel free to say I felt very much handicapped as to the diagnosis. The diagnosis of simple non-perforating ulcer of the stomach or duodenum is not a simple process even with the aid of X-ray. Few of you I venture to say but that have operated for ulcer on the diagnosis of the X-ray and failed to find them. The problem of ruptured ulcers should not present such a baffling condition today but only too frequently it is not made. If a typical history of ulcer does not always present an ulcer at operation a typical history can and will force our conclusions of a rupture in cases of violent pain in the upper abdomen, not relieved by the ordinary doses of morphia, and with a board like rigidity of the abdominal muscles. Therefore, we should pay special attention to the previous history with the further point that the pain comes on usually when the stomach is empty. Deaver has said, in an article recently on this subject, that 20% of ruptured ulcers gave no history previous to the rupture. It is granted that possibly many cases of ulcer will heal under diet and rest of the stomach or Sippy's treatment but the experience of Wilensky of New York is that 40% of the cured cases came back later to the surgeon for operation. A rupture is an indication of the inability of the tissues to overcome the pathology, a lack of healing power.

Case 1, 1909. Mr. M. A young man 24 years old, who had indigestion for several years, though in apparent good health, was on his way from his office to lunch. After walking for three blocks, he was suddenly taken with a violent pain in abdomen and fell in the street. He was carried home and his family physician called and gave him hypodermic morphine, 1/4 grain. I was called in two hours later and found him in bed with abdomen rigid, pulse 120. temperature normal. He had at that time recovered from shock. I advised an operation for ruptured appendix. He was removed to hospital and two hours later abdomen opened by right rectus incision. The abdominal cavity was filled with serious fluid, purulent in character, along flabby appendix, was removed and the abdomen dried with sponges. Before closing, I inspected the duodenum and found a ruptured ulcer just outside the cap on the duodenum side. I closed over ulcer with two layers of cutures, then closed abdomen, drains being inserted at both ends of incision. For four or five days he was vomiting and nauseated and run a temperature from 99 to 101. The drainage gradually removed so that all was removed in ten days. In four days liquid diet was begun and in six days soft diet. He made an uneventful recovery and left hospital in three weeks, he is now in good health and gained considerably in weight.

Case 2, 1917. Mr. G, age 34. Called on his physician for trouble with indigestion, this physician having treated him two years before for ulcer. He was prescribed for and walked across the street about 6 p. m. to a drug store to have same filled. He fell at the drug store door, with violent pain in the abdomen. The same physician was called

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and gave him hypodermic morphine ¼ grain and took him to the hospital. I was called two hours later, found he had recovered from first shock. His abdomen was absolutely rigid, temperature normal, pulse 130. I diagnosed ruptured ulcer of duodenum and advised operation. I operated on him one hour later, right rectus incision and found abdomen filled with fluid, sero-purulent in character. There was ruptured ulcer on the duodenal side of cap, leaking. This was closed with two sets of sutures and a gastro-enterostomy done, drainage inserted at point of ulcer. Abdomen was closed, liquid diet given in forty-eight hours and water after twenty-four hours. Drainage gradually withdrawn until at the end of ten days all was removed. He made an uneventful recovery and left the hospital in eighteen days. He is now in good health and doing his usual work as railroad conductor.

Case 3. Mr. C, age 27. Was passing through town and came in on a late train. About 11 o'clock, not having had breakfast, he went to a cafe to get lunch before catching another train. While sitting waiting for his meal, his order having been given, he was suddenly taken with violent pain in abdomen and his friends took him to the hospital and called me to see him. He was in profound shock, abdomen absolutely rigid all over. Ruptured ulcer was diagnosed, he was given hypodermic morphine ½ grain and one hour later was operated on. Quite a lot of fluid was found and an ulcer of the stomach leaking just outside the cap. This was closed over with three sets of sutures, drains inserted and abdomen closed. He made an uneventful recovery, liquid diet was given in forty-eight hours, soft in four days, water freely after twenty-four hours. He is well now and in good health, as I saw him only a few weeks ago.

Case 4, 1920. Mrs. P., age 27 years. Married, two children, was brought into the hospital, having been taken seventy-two hours before with violent pain just before supper. Abdomen rigid, pulse 130, temperature 102. Abdomen was opened high, right rectus incision, as ruptured ulcer was diagnosed. Abdomen was full of sero-purulent fluid, also pelvis. Ulcer of stomach was found just to the inner side of cap. This was closed with two sets of sutured, drainage inserted and also stab wound above pubes and pelvis drained. She did very well for ten days, running a little temperature, 99 to 101, then had a chill one night and temperature jumped to 102, had pain in right lower chest two days later. Under local anaesthesia the chest was opened and about one pint of pus was removed from plural cavity and two rubber tubes left in for drainage. Four days later she developed septic pneumonia and died in twenty-four hours.

Case 5, 1920. Mr. R., age 28 years. Married; he was in the army and told he had an ulcer. He came home in 1918 and attended a crop, and in September, 1919, had some indigestion, was taken before supper with violent pain in abdomen. The next morning he had his family physician and he gave him a hypodermic morphine ¼ grain and sent him to hospital. I was called in to see him and diagnosed ruptured ulcer and operated about noon. Found ruptured ulcer of duodenum at the pyloric, leaking and abdomen full of fluid. Ulcer was closed with two sets of sutures and drainage inserted. This was eighteen hours after rupture. Began diet in forty-eight hours, soft in seventy-two hours. He ran a temperature from 99 to 100 about two weeks and then had a chill, temperature jumped to 104. The next day I opened the old wound down the line of drainage to the ulcer, under oxygen-gas, thinking I would find abscess either under the liver at the seat of ulcer or above the liver, but this part of abdomen was clean. So with two drains the wound was closed, his temperature came down to normal and on the third day had another chill and complained of pain in lower right chest. I had several medical men to see him and they diagnosed pneumonia in the lower right lung. He ran an irregular temperature from 99 to 103 for five days, when I opened the right chest and drained an abscess between the right plura and the diaphragm, the plural cavity comparatively free. He developed septic pneumonia and died two days later.

Case 6, Mrs. L. S., age about 30. Entered hospital June 28, 1918, with history of sudden violent pain in the upper abdomen the night before. Come on late in the night. Thought she had colic and after several hours succeeded in getting her doctor. At the time she

had temperature of 99.5 and pulse about 100. Mustard plasters and hypodermic of morphine failed to relieve pain. Next morning she was brought to the hospital. Patient had the appearance of profound shock, anxious look, tenderness over entire abdomen with no special area, possibly slightly so over the epigastrium. Temperature 101 and pulse 120. Diagnosis of gall bladder trouble was made with possibility of duodenal ulcer. On opening the abdomen through right rectus incision high up the gall bladder was found adherent to the stomach and duodenum and transverse colon. Abdomen full of chyme fluid with congested peritoneum especially over the right side of abdomen. Around the duodenum there was considerable inflammatory tissue and on freeing it so that duodenum could be inspected a small ruptured area was easily seen about one inch external to the pylorus. This was sewed over and post gastrojejunostomy done. Appendix was also removed. Abdomen drained and patient made slow but uneventful recovery.

Case 7. P. D. White, male, age 32. Previous history and X-ray diagnosis indicated ulcer of the stomach about pylorus one year ago. Under medicinal treatment, with diet, he improved and for last two months had been apparently entirely cured. The morning of March 23, 1921, was taken with violent pain in the upper abdomen, nausea, but very little vomiting. His family doctor was called and under ice bag and hypodermic of ¾ grain morphia his pain was made bearable. His father, who is a physician, was called from a nearby town. This necessitated a delay of a day. That night he was brought to the hospital, arriving there fifteen hours after the rupture. Diagnosis of rupture was made and abdomen opened. Abdomen was full of fluid and pus, especially on the right side. Pelvis full of pus. Just external to pylorus there was a ruptured ulcer with a broad indurated base, through which stomach and duodenal contents were escaping. This was inverted, tag of omentum sewed over area and rubber tube sewed to this area with omentum wrapped about the tube. Upper abdomen and pelvis freely drained and wound between sewed up. Patient was delirious and had a rather stormy time for a week, then began to clear up. Made an uneventful recovery following this.

There are three factors in summing up from my experience of symptoms and prognosis:

1. There is a sudden and violent attack of pain, while stomach is empty in all cases.

2. There is absolutely about the most rigid abdomen you will find from any other cause, extending from the ensiform cartilage to the pubes, hard like a board, much more so than in cases of ruptured appendix.

3. There is more profound shock in these cases.

4. There is always danger in these upper abdominal cases, causing infection through the deep glands under the liver, diaphragm or right plura and lung, these parts becoming involved.

HYSTERIA

By Frederick R. Taylor, M.D.,

High Point, N. C.

Osler once said, "Know syphilis, and all things clinical shall be added unto you." There is one other disease to which the same aphorism applies with equal, or even greater force—hysteria. In its protean manifestations, in its exhibition of the bizarre, the spectacular, the comic, the tragic, the unexpected, the baffling, the annoying, and the fascinating, hysteria stands alone, and in its consummate simulation of other diseases, syphilis is its only rival. It runs the whole gamut of human emotions and ideas, and I am unable to think of any subjective symptoms which it cannot display. There are a few physical signs which it does not ordinarily produce, but there are many more of the most extraordinary and spectacular nature, that may on occasion deceive the very elect.

The interpretations of hysteria have, in the past, been almost as varied as the manifestations of the disease itself. Divine ecstasy, madness, witchcraft, and malingering are but a few of the explanations offered in the history of this disease. The best known, because the most catchy definition, is Babinski's

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famous one, that "hysteria is a disease produced by suggestion and cured by persuasion." The 1920 edition of Osler and McCrae's "Principles and Practice of Medicine" is broader and more guarded in its definition, which is, "a disorder of personality manifested by a heightened and perverted suggestibility, a change in character, together with certain mental and bodily states induced by suggestion—auto—or hetero—and cured by persuasion." This is more comprehensive and satisfactory than Babinski's definition, but it still fails to give us any conception of the essential nature of the disease. The old conception of the uterine origin of the disease, whence the name "hysteria" is derived, still finds expression in a modified form in the extravagant theories of the Freudian school, which are here mentioned only to be condemned as half truths. The most satisfactory definition that I have been able to find is that of Pierre Janet, who writes: **"Hysteria is a form of mental depression characterized by the retraction of the field of personal consciousness, and a tendency to the dissociation and emancipation of the systems of ideas and functions that constitute personality."** There may be flaws in this definition, but at least it gives us a clear-cut conception of the nature of the disease, with which all the observed phenomena can be harmonized.

The Germans taught us much about disease from the standpoint of pathological anatomy in the latter part of the last century, the Anglo-Saxon world is today making enormous strides in pathological physiology, but neither of these fundamental sciences adequately explains hysteria. The peculiar and invaluable contribution of Janet and his brilliant school of French workers has been the development of pathological psychology as a fundamental medical science, and the application of this science in the interpretation of hysteria as given in Janet's definition just quoted, clears away many difficulties, and sheds light for future progress.

Let us examine this definition in a little detail. To take the first point—**hysteria is a form of mental depression.** "What!" you may think, "do you mean to claim that all hysteria is a depression? What about your hysterical fits, your grand outbursts of passionate emotional states, etc.? Are these things depression phenomena? "Herein lies a paradox—they are at once phenomena of depression and excitation. The coordinated personality is depressed, and depressed below the threshold of consciousness, while one function, or group of functions of the personality is dissociated from the rest, and, dominating the field of consciousness, it runs riot. A somewhat similar phenomenon may be observed in the "stage of excitement" of alcoholism where there is depression of inhibition and co-ordination. In other types of hysteria the depression may be more limited and specialized, as, for example, the depression of sensation in some part of the body producing an anesthetic area, etc. In the case of a hysterical spasticity of a limb, the idea is suggested, and other ideas antagonistic to this one are depressed until there is complete dissociation and dominance, so far as that limb is concerned, of the idea of the spastic condition.

In elaborating the first point in the definition, we have already touched upon the succeeding points. **The retraction of the field of personal consciousness** may be observed in every hysterical state. If an idea or suggestion becomes fixed in the mind, it produces bodily or mental effects that would be impossible, were there not a retraction of the field of consciousness which excludes other ideas obvious to normal individuals, and incompatible with the hysterical idea.

The third point in the definition, that hysteria is characterized **by a tendency to the dissociation and emancipation of the systems of ideas and functions that constitute personality,** is the very sum and substance of the whole matter. **Dissociation** is the key word. It unlocks many of the hitherto incomprehensible puzzles of this extraordinary disease. Suggestion plays a part, to be sure—we by no means reject Babinski's dictum en masse—and we have seen, and even produced, cures by persuasion, of too definite a nature, to doubt the value of this method when properly applied; but Babinski doesn't get at the heart of the matter. How does suggestion produce such phenomena? The answer is, by dissociation. Persuasion, when it cures, associates. Or, to use a slightly different phraseology, the disease is a psychological disintegration, and the cure or recovery a psychological

integration. The dissociation may be of only a part of one function, as in constriction of the visual fields, or it may amount to a complete double personality, or it may be anywhere between these two extremes.

Charcot taught that hysteria manifests itself in two ways—by temporary obvious phenomena, and by stigmata which are present before the obvious symptoms appear and persist after their disappearance. More modern authorities reject this view. There is unquestionably a type of nature that is peculiarly susceptible to attacks of hysteria, i. e., there may be a tendency towards hysteria, just as there may be a tendency towards tuberculosis. However, a highly strung emotional nature is no more actual hysteria than a flat chest is necessarily tuberculosis. Furthermore, just as the man of perfect build, given sufficient exposure plus a sufficient exhaustion of resistance may develop tuberculosis, so **anybody may develop hysteria under sufficient provocation.** This idea has been especially well elaborated by Arthur F. Hurst of England ("What the War Has Taught Us About Hysteria," in "Contributions to Medical and Biological Research," dedicated to Sir Wm. Osler, Vol. I, p. 600ff.)

These two ideas, that there is no constant hysterical mental condition, and that hysteria may occur in anybody, lead to most important practical results. Hysteria, as Hurst points out, is more common than has been supposed, and many conditions regarded as organic are really in part or wholly hysterical. This explains most of the successes of Christian Scientists and the followers of various other cults and isms, with patients that physicians and surgeons have failed to diagnose and cure, because of the absence of the supposed hysterical stigmata. Anesthesia, constriction of the visual fields, etc., believed by Charcot to be permanent stigmata, have been repeatedly shown to be dissociation phenomena produced by suggestion. In hunting for the "stigmata" of hysteria it is extremely difficult to avoid giving powerful suggestions to an abnormally suggestible patient.

The war has taught us beyond peradventure that anybody may develop hysteria. Many unemotional stolid soldiers developed profound hysteria because of the terrific strain to which they were subjected. Equally great with the strain was the intensity of the suggestion that severe disability meant release from the horrors about them. The heroic natures battled against the strain and suggestions until they overcome them, or until the conflict proved too severe, and **dissociation and emancipation of the ideas and functions that constitute personality** resulted—in a word, they developed hysteria. Certain of the less heroic natures, unable to bear the extremity of suffering and strain necessary to produce the dissociation, voluntarily and consciously disabled themselves, and came to be among the S. I. Ws, as they were called—those with self-inflicted wounds. Many of the S. I. Ws., however, were truly hysterical—there was depression of all ideas save the one of getting wounded as quickly as possible, and that ran riot. It is gross injustice to class all S. I. Ws. together—some are genuine hystericals, and others simple evasive slackers.

A very common fallacy among medical men is to assume that a given condition is always either entirely organic or entirely hysterical. Hurst believes that the most common source of hysterical symptoms is some organic disease or injury, the symptoms resulting from which are perpetuated or aggravated by auto-suggestion, and even by hetero-suggestion on the part of the physician in the course of his examination and treatment. Certain it is that hysteria and organic disease are often concomitant. Who dares claim that he can lessen the structural changes of tabes, once they have occurred? Yet the Frenkel re-educational exercises often help the tabetic. What is this but the removal of a hysterical exaggeration of an organic ataxia—a re-education of the mind rather than of the deficient muscle sense?

The therapeutic value of the personality of the physician is everywhere recognized in all forms of disease. It does not cure cancer or tabes, to be sure, but it may mean the balance of power between life and death in so grossly organic a disease as tuberculosis. Hurst cites a case which forcibly illustrates the association of hysteria and organic disease. A soldier was admitted to hospital with such severe ataxia that he could scarcely use his hands, and could neither walk nor stand without assist-

ance. A thorough examination was not made at first, and the condition was regarded as hysterical, and treatment directed accordingly. At the end of a week he could walk almost normally, and could use his hands for all ordinary purposes. A more careful study then showed that he had all the typical signs of Friedreich's ataxia, and his brother was a complete cripple from this condition.

Janet cites another interesting case of a young woman who cut her right hand, severing the median nerve and producing slight organic anesthesia of the fingers, which distressed her greatly, and on account of which she applied for treatment. A simultaneous profound hysterical anesthesia of the entire left side of her body did not trouble her in the slightest degree—sensation there was dissociated from the rest of her consciousness, and could not trouble her, whereas there was no mental dissociation of sensation in her right hand—she was keenly conscious of that loss.

The lesson to be drawn from these and other similar cases is that in every case of organic disease, even of progressive organic nervous disease, the possibility of a hysterical element should be considered, psychotherapy applied, and the hysterical element, if present, removed as far as possible. Nothing but actually trying psychotherapy can show the degree of hysterical element present. Hurst has made the interesting discovery that even certain time-honored physical signs of organic nervous disease may be present in hysteria, when that hysteria is a perpetuation of the phenomena originally resulting from a temporary organic condition. Thus he cites two cases of hemianopsia due to gunshot wounds of the occipital lobe causing concussion and other evanescent changes. When these phenomena cleared up, the hemianopsia persisted until removed by psychotherapy.

Dr. Hanes asked me to report a case of somnambulism, which Janet says is always a hysterical phenomenon, if I had any in my records, but I regret that I have no detailed observations of such a case. It has been my good fortune to see two cases of extreme hysterical convulsive attacks of the type that Janet says Charcot described, but that died with him, having gone out of fashion and given place to somnambulistic phenomena, which, in turn, largely disappeared when hysterical paralyses became the style. Both illustrate the extraordinary simulation of organic disease that may occur in hysteria. They can be given only brief mention here. One, a man 33 years old, simulated epilepsy. He was apparently unconscious when first seen, with his back arched, cyanotic, and frothing at the mouth. Aromatic spirit of ammonia under his nose aroused him, and he tried to escape from the room. After someone had suggested the possibility of epilepsy, he said he was epileptic. Before that he said he had been drugged. He had several convulsions with lucid intervals of a few moments between them. He did not hurt himself in these convulsions, but showed us a depression about the size of a dime in the right parieto-occipital region which he said was due to injury in a former similar attack. One leg had been amputated below the knee because of a railroad accident six years previously. His convulsive attacks antedated this, he said, having begun at the age of 14. He had anesthesia of an irregular region about the left iliac bone and extending over to the left groin and hypogastric region. His urine was negative. He recovered from his attack in 24 hours.

The other convulsive case misled three of us into a diagnosis of strychnine poisoning. She was brought into the Germantown Hospital in Philadelphia in extreme opisthotonos, by a police patrol. The only history we could get at that time was that the police had picked her up in a drug store in a convulsion shortly after a drug clerk had given her a headache powder. The intern in charge of admitting patients washed her stomach and introduced tannic acid and 60 grains of sodium bromide through the tube. This was followed by ¼ grain of morphine hypodermically, and she was sent up to my ward. Her convulsions steadily became more violent and frequent. Their violence was beyond description, almost rivalling the convulsions in a case of rabies that I once saw. Nobody suggested anything other than strychnine poisoning—a diagnosis of hysteria would have seemed ridiculous to us. These convulsions lasted seven hours, being controlled only partially with chloroform. How the girl stood the terrific muscular strain I do not know.

She appeared to hear everything we said except when under chloroform, but talked a great deal to her mother, who was not present. Her pulse was too good and her reflexes too slightly exaggerated for strychnine poisoning, but the spell of the spectacular was upon us youngsters, and the diagnosis remained unchanged till the next day. We finally extracted a long history from her, full of contradictions, lies, accounts of family quarrels, etc. To make a long story short, we eventually discovered that though she denied having ever been in Philadelphia before, she had actually been a patient in five Philadelphia hospitals, and had frequently been chloroformed, but her real diagnosis was hysteria complicating chorea. There was considerable evidence to show that she had a double personality. The chorea was treated medically, and the hysteria was cured for the time being by ordering the nurse in the patient's hearing to allow the patient to have all the fits she pleased, and throw herself out of the window if she liked.

A very interesting case of traumatic hysteria was observed in the Germantown Hospital. The chief points of interest were its typical character in a strong, healthy young man, and the absence of any medicolegal aspects to confuse the picture. This is the last case that I shall weary you with. A heavily built red-faced healthy looking fellow 20 years old was admitted with the complaint that his left arm and his body from his waist down were powerless. He stated that about a year before, he was thrown from a horse, and the horse fell on his abdomen. He didn't give up for three weeks, but then went to the Jewish Hospital in Philadelphia with pain in both knees, which was relieved by capsules and oil of wintergreen. He said he sometimes got pain in his knees and fell, sometimes got tender swellings on both sides of both knees, and sometimes got paralyzed. Pain does not cause inability to move—it is simply loss of power. He says that during these attacks he vomits if anyone sits him up in bed. Somewhat constipated. Often has sharp stabbing transient pains in umbilical region which do not radiate anywhere. For about a year, getting out of bed in the morning, walking fast, or running, would cause everything to look black, and he would fall. Then his knees would feel very stiff, and he could not move them for a while. Once he got off a street car in a hurry and suddenly lost power in both knees, and had to stand still 15 minutes before he could proceed. Has never had paralysis of bladder, bowels, or genital apparatus. Complains of sharp stabbing pains every 15 or 20 minutes in right lumbar region. While being observed he suddenly jumped, and said it was due to one of these pains. Said he had blood-streaked sputum and bloody stools. This was a pure fabrication, so far as we could learn. Constant backache and headache. Says he has no sensation from waist down or in left arm, except that when left arm is picked up, pain shoots across chest obliquely down as if a string were cutting him. Other previous history and family history unimportant. Drinks four or five cups of boiled tea and smokes a pack of cigarettes daily. Is a plumber, but has never had lead poisoning.

Physical Examination — Does not move body below waist. Gives frequent sudden starts and jumps with upper part of trunk when he feels the sharp pains described above. Now says his body always seem to be in a raging heat. Skin cool and rather dry. For the sake of brevity only significant findings will be catalogued. Pupils moderately contracted, with left pupil slightly larger. Slight lateral nystagmus. Pressure over right mastoid slightly painful, but no signs of otitis. No lead line on gums. Heart normal except for frequent extrasystoles at irregular intervals. Marked hyperesthesia all along spine, relieved by deep pressure except in cervical region, where deep pressure increased the pain. Sitting him up in bed did not make him vomit. Upper abdomen showed rather superficial hyperesthesia, relieved by deep pressure. The skin in that region, however, was anesthetic to pinpricks. Pain shoots down into right thigh when epigastrium is lightly pressed. External genitals normal.

--Extremities—Upper right, normal. Left relaxed and motionless. No muscle atrophy. Anesthetic throughout except for very small point in front of elbow. Lower, both anesthetic throughout, except that in one point in left thigh, just below Poupart's ligament, he jumps at a pinprick, but says he does not feel it. Back, skin sensation normal in upper part. Marked cuta-

neous hyperesthesia in lumbosacral region. Lower half of buttocks anesthetic. No ataxia in finger-to-nose test. He now says that the soles of his feet feel as if they were split open, though he can't feel pinpricks there. Bicipital reflex present on both sides, exaggerated on "paralyzed" side. Patellar reflexes slightly decreased. No ankle clonus. No plantar reflexes because of anesthesia. His legs are not powerless, as he holds them horizontally over the bed extended, when they are placed in that position until told to relax, when he does so, and his knees bend. No slurrish speech or tremors. Urine negative.

On taking Epsom salts he remarked that it would do him no good, and that a teaspoonful of plain table salt was the only thing that would move his bowels. The Epsom salts worked, however.

The patient was out of bed in five days as a result of suggestion. A very bitter stomachic was given by mouth, and hypodermics of sterile water every four hours during the day and at 2:00 a. m. Patient said that hypodermics made him sleepy. On all possible occasions he was told with the most emphatically positive assurance that he would recover quickly. In five days he was out of bed, and in nine days, only a limp in his walk remained, and this disappeared instantly when he overheard us telling his mother that he had been given hypodermics of plain water. He then asked for his immediate discharge, and this was granted.

I would like to go on and cite further cases, including one of hysterical mutilation observed personally, and another described to me by Dr. Hanes, but time forbids.

In closing, I would emphasize these four points:

1. The pathology of hysteria is not anatomic or physiologic, but psychologic.

2. Hysteria in all its aspects is a dissociation of the functions of personality, partial or complete.

3. Anybody may get hysteria, given sufficient cause.

4. Hysteria and organic disease frequently coexist in the same patient, therefore in all cases of hysteria we must search for organic disease, and in all cases of obstinate organic disease we must search for hysteria.

CYSTS OF THE NECK*

By Dr. R. L. Payne, M.D., F.A.C.S.,
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While certain forms of neck cyst occur often enough to be fairly familiar pathology to most surgeons, yet all of the various types are of sufficient variety to lend interest to the subject; but the facinating side of these lesions is the study of them from the viewpoint of their embryological origin, for the surgical cure of these cysts depends so completely on the knowledge of the embryonal structures from which they are derived.

Unless you all have been a student of these tumors, I doubt whether many of you are familiar with the occurrence of six different types of cysts in the neck, each of which have a definite and different embryological origin with the exception of the parasitic type.

The first type is the parasitic type and can be passed over in a few words. It usually occurs around the terminal distribution of the small arteries of the neck, usually due to the echinococcus and can be distributed at any point where the parasite may be deposited. The surgical cure in this type is simple and depends only on the complete removal of the mass without rupture.

The second type is the dermoid. These types are quite rare and the writer has never seen one but they do occur and their origin is definitely embryonal. You will recall that the pharyngeal region in the embryo resembles that of an adult fish but the clefts between the arches in the fish are filled in by a membrane in the human embryo. This membrane has an internal and external covering known as the hypoblast and epiblast. When the ventral folds of the embryo are in the process of fusion, there is sometimes included or pinched off, small areas of epiblast and from these epiblastic cells the dermoid tumors are derived. One diagnostic feature is that they always occur in the mid-line and another point of interest is that their so-called ectodermal origin often gives to them the possibility of malignant degeneration. These are most unusual tumors and the writer re-

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calls with great interest having seen three specimens of this type in the Medical Museum when a student.

The third type is the thyroid cyst. This variety arises from degenerating adenoma in the gland substance, and usually occurs in the lateral lobes. These cysts are quite common and may thus be passed by with this brief notation.

The fourth type is the thyro-glossal cyst. Here the embryological origin is of tremendous importance, for upon the knowledge of these facts depends the successful surgical treatment. As the name implies the origin of these cysts is intimately connected with the tongue and thyroid isthmus and upon this knowledge depends the surgical eradication of these tumors. Between the third and sixth week of the embryo the arches have all closed or disappeared and at this time a bud from the hypoblast grows downward from the base of the tongue at the point known as the foramen cecum passing through the pharyngeal portion of the tongue thence through the hyoid bone, or above or below this bone, and terminates to form the isthmus of the thyroid gland. Usually this tubal bud is obliterated, but sometimes such is not the case and there then persists a tube extending part or all the way from the foramen cecum at the base of the tongue to the thyroid isthmus. This later develops into a cyst and its complete surgical removal depends on the amount of the original tube that remains patulous; occasionally the demonstrable cyst is all of the persistent embryological structure and surgical removal of this cyst will suffice to cure. Too often, however, the cyst is not all of the vestigial remains and a small tube, lined with a single layer of epithelium, runs back to the hyoid and often beyond the hyoid, through the tongue to foramen cecum. Operative failures are of course due to incomplete operations but the great problem for the surgeon is how to know when complete eradication has been accomplished. The persistent duct is usually too small for microscopic demonstration and it is only by second and third operative attempts to cure, that the surgeon realizes he must dissect the complete course of the embryological vestige. Injections of the cyst with some aniline dye has found favor with some surgeons but this measure has too often failed. The surgical cure of these cysts can therefore be divided into two varieties of operations; first, the conservative which attempts to remove only what is visible, and second, the radical which begins the dissection at the thyroid isthmus and passing up includes a small central piece of the hyoid bone and all of the vestigial tract up to the foramen cecum, thus going through the floor of the mouth and the entire thickness of the tongue at its base.

The fifth type is the branchiogenetic cyst. This form covers the commonly seen cysts in the neck grouped under the heading of ranula, sub-maxilly cyst and cervical cyst. That these cysts are embryological in origin has long been believed but no definite structural origin has been worthy of acceptance until Dr. James E. Thompson advanced his theory that these types are all derived from embryological remains of the cervical sinus. Time will not permit the writer to give you any description of minute embryology, relative to this structure but briefly we may relate as follows:

At the fourth week of the embryo the second arch grows downward and covers the third and fourth arches and touches the body wall behind the fifth arch. This growth is analogous to that forming the gill cover in fishes, thereby the mouths of the second, third and fourth cleft depressions are covered up and a space is shut off into which they open. This space is called the cervical sinus and extends from the tonsils or second cleft to almost any point on the front of the neck. This sinus is usually obliterated but when this does not occur a cyst or sinus may result. For the surgeon to know that a ranula may connect, through a persistent sinus, with the tonsil is highly important and that one of these cysts of branchiogenetic origin may be subject to fragmentation or isolation by muscular action, thus producing one or more cysts all arising from a mother cyst is really the crux of the problem relative to surgical cure. No satisfactory evidence has ever been advanced to prove that ranula come from mucous glands in the floor of the mouth or from salivary glands and agreeing with Thompson, the whole subject is tremendously clarified if we accept the following:

From the vestigial remains of the branchial clefts are derived the ranula, the sub-maxillary and deep cervical

cysts; the primary cyst results from the persistance of the cervical sinus and this is often carried from the original position by the shifting of the muscles during the formation of the neck.

By the same muscles, isolation or fragmentation occurs and parts of the mother cyst is carried backward by the palate muscles while part is carried into the sub-maxillary region and tongue by the migration of the muscles of the hypo-glossal group.

The sixth type of neck cyst is the lymphocele or hygroma celli. This variety is rather common and occurs usually in the lowest part of the posterior triangle. The origin is from the jugular sinus, a foetal bud developing about the third month of the embryonal life. These cysts are usually seen in children, forming a soft, spongy tumor. The jugular sinus extends from the jugular foramen in the base of the skull, downward to the clavicle, hence the importance of this embryological origin in dealing with these tumors surgically. The usual type is of delicate cob-web like consistence, the interspaces filled with lymph and the processes of the tumor dip down and under the clavicle between most of the muscle planes and usually extend upward to the styloid process. The surgical removal is tedious but if one remembers the limits of the jugular sinus, complete eradication can be effected. The location of these cysts in the posterior triangle and their physical characteristics would preclude confusion with any of the other types of cysts occurring in the neck.

AN UNUSUAL FOREIGN BODY IN URINARY BLADDER

Albert D. Parrott, M.D., F.A.C.S.
Kinston, N. C.

In perusal of medical literature one finds that every conceivable kind of foreign body at various times have been located in the urinary bladder, including such articles as hair pins, broken catheters, stones, etc., I beg leave to report the following:

Some time ago Dr. C. W. Sutton, of Richlands, N. C., sent us a patient about 45 years old with the following history and symptoms:

He said two weeks prior to calling Dr. Sutton, while firing a tobacco barn, he carelessly put about one-half of the glass graduated tube (mercury tube) of a thermometer such as is used in keeping "tab" on temperature while curing tobacco into his mouth, and accidentally swallowed it. Since then he has experienced very severe pains at times in the region of his throat, esophagus, and stomach as result of swallowing same.

Has also passed frequent and bloody stools, frequent and bloody urine accompanied with tenesmus.

Examination revealed a rather poorly nourished and an unmistakably neuropathic individual, and one whose story I accepted with some degree of reluctance.

Procto - sigmoidoscopic examination revealed nothing abnormal. X-ray showed round object about the size of a lead pencil lying transversally in lower central pelvic region in what appeared to be bladder-space.

Urine very bloody contained many pus cells and various kinds of bacteria.

Cystoscopy confirmed X-ray examination. Super-pubic cystotomy was performed and six inches of glass tube from thermometer was removed, the patient making an uneventful recovery.

Paradoxical as it may seem, the patient steadfastly denied inserting it into his bladder, and swore to the last that he actually "swallowed" it.

BOUGIE FOR DILATING THE LOWER URETER

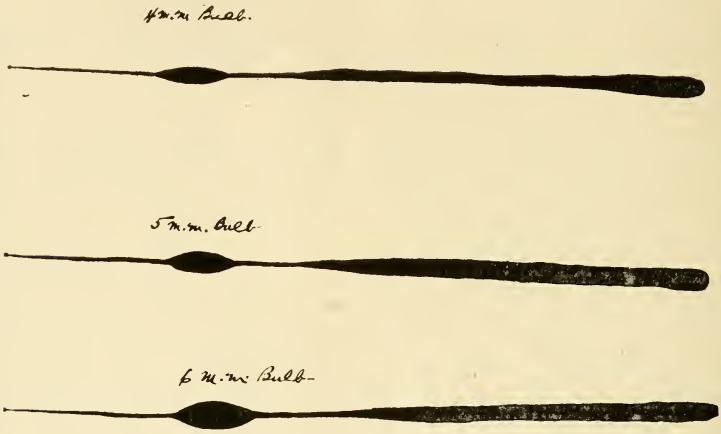
Thomas M. Green, M.D., F.A.C.S.
Wilmington, N. C.

Recently much attention is being shown the various methods of dilating the lower end of the ureter for the relief of stricture and hydronephrosis, as well as for the purpose of permitting impacted stones to pass into the bladder.

At present there seems to be no better way of accomplishing this than that suggested by Hunner of using a No. 7 or No. 8 ureteral catheter with a stiff styelette, upon which wax bulbs are molded. These are passed into the ureter through the Kelly cystoscope. This is readily accomplished in the female, but is more difficult in the male, though Goldstein finds it can readily be accomplished by first passing the catheter with a wax buld into the bladder and

then doing a retrograde threading of the catheter through the cystoscope.

In presenting a set of bougies of whalebone which I have found most satisfactory in dilating the lower ureter in females through a Kelly's cystoscope, I believe that it is a step forward, certainly as regards the female. The flexible filiform in front of the bulbous portion behaves like the filiform of a Le-Fort Sound and renders the passage of the bulbous portion through the constricted area much easier, since the bulb can follow more readily the curve of the ureter, having the guiding filiform in front of it. I find that it passes much more readily than the catheter with the stiff wire stylette and that dilitation can be much more readily accomplished and without danger.



The next annual meeting of the Tri-State Medical Association will be held February 21-22, 1922, at Norfolk, Va., with headquarters at the Monticello Hotel.

SOUTHERN MEDICINE AND SURGERY

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M. L. TOWNSEND, M. D.
J. C. MONTGOMERY, M. D. } Editors

CHARLOTTE, N. C.

"Read not to contradict and confute, nor to believe and take for granted, nor to find talk and discourse, but to weigh and consider."—Francis Bacon.

Dr. Isaac M. Taylor.

The removal by death of Dr. Isaac M. Taylor takes from the people of the State of North Carolina and of the South a man who will be missed. For more than thirty years he had rendered to these people a distinct service, which called for the exhibition of splendid qualities of heart and of mind.

His training in mental diseases was had under the tutelage of Dr. P. L. Murphy, in the State Hospital at Morganton. For a period of probably sixteen years in the capacity of assistant physician in that institution he contributed in large measure to the establishment of an asylum whose reputation became of the first order. Many men and women of the State recall with gratitude his skillful and kindly ministrations to them when they were stumbling in that unhappy land betwixt light and darkness. This period of long and capable service to his native State fitted him in excellent fashion for the organization and the management of a private institution for the treatment of nervous and mental diseases. His private Sanatorium at Morganton—Broadoaks—was the first private institution devoted solely to the treatment of mental disorders within the State of North Carolina. He was the State's pioneer in this field. From the day this sanatorium was opened by Dr. Taylor it was kept on a high plane. He gave his hospital high character because he dealt intelligently and faithfully with his patients, and honestly and sympathetically with their people.

He was honest. He was sincere. He was frank. He was devoid of sham and pretense. He hated insincerity. He made no claim to knowledge which he did not possess. He had good inheritance of intellect and of character. His upbringing made him fit for a doctor, as his father was a physician. His boyhood days were spent largely on the campus of the University of North Carolina, as his family lived during his early years in Chapel Hill. He instinctively craved knowledge. His mind was full of curiosity to know whatever he did not know. He was well educated—in literature, in medicine, and in the ways of mankind. He was an acute observer. He saw much, thought much, said little. His vocabulary was large; his diction good, and his statements accurate. Sometimes he hesitated in conversation, because of an occasional tendency perhaps to stammer, but his tardiness was never because of inability to know his own thoughts. He was often incisive, occasionally epigrammatic. His thought processes were clear and consequently he wrote well. He had quiet courage of high order. In the court room, on the witness stand, amongst trained men of the bar, even when local feeling and public opinion were averse to his own opinion he stood firm. When he knew in his own heart that he was right he could not be swayed from his fixed position. In any situation he was able always to present his opinions and successfully to defend them. As an expert in diseases of the mind he was often called into the court room, and there he commanded respect both because of his ability and because of his character. But he was modest in extreme degree, and the conspicuousness of the elevation of the witness chair was peculiarly distasteful to him. The spirit of the young man was in him to the last. He thought as a young man, he loved young people and they loved him. Charitableness entered largely into his make-up. His life's work brought him daily into association with those whose characters and souls were stripped bare and made nude before him, but he looked upon mankind with a deep-seeing eye, an understanding mind, and therefore ever with a kindly heart. He was charitable likewise in deed. He gave of himself and of his substance freely and without measure and the world knew not of it.

His home was happy. He was companionable, he loved his fellowman, he was loved, and his going away will be

mourned by his fellow-physicians and by the citizenship of the State. His family is left as a blessed heritage his splendid service to the State and to those who suffered in darkness. A great mind and a great heart have come into rest. J. K. H.

Dr. B. L. Taliaferro.

Dr. B. L. Taliaferro, Superintendent of the State Sanatorium for Tuberculosis, at Catawba, Va., died in Roanoke on November 21, 1921. Dr. Taliaferro fell as a victim of the disease to the eradication of which he had dedicated all his splendid zeal and medical skill. Just before his death he made the request that no flowers be sent to his funeral, but that he would prefer that expenditures for such a tribute to him might express themselves through contributions to the Tuberculosis Foundation Fund at Catawba Sanatorium.

Dr. Taliaferro was a native of Richmond, a graduate from the Medical College of Virginia of the class of 1898. In his early professional days he did general practice in Richmond and during that time he was a member of the faculty of the Medical College of Virginia. As a preparation for the limitation of his work to the tuberculosis problem he studied in Johns Hopkins Hospital and also in Vienna. He was a man of splendid attainments and of boundless enthusism.

Dr. Taliaferro leaves a widow, three young daughters, and a sister.

Approaching Meeting of the Tri-State Association.

The twenty-fourth annual meeting of the Tri-State Medical Association of the Carolinas and Virginia will be held in Norfolk, Va., on Tuesday and Wednesday, February 21 and 22, 1922. The Monticello Hotel will be the headquarters of the meeting, and there the sessions will be held.

At the last meeting of the association by vote of the members, the by-laws were modified so that hereafter not more than forty papers can be presented at a meeting. The program for the approaching meeting is already being formulated, and a number of titles have already been sent to the secretary. Members will please understand that when forty applications have been accepted for a place on the program, that no more titles can be received. This is a situation over which neither the secretary nor the president has any control. Those who desire to read papers at the Norfolk meeting are requested therefore to send titles to the secretary at once. It would seem desirable for those who intend to present papers at the meeting to ask some of their fellow-members to discuss their papers. Owing to the limited number of papers there will be ample time for the fullest discussion.

It is understood, of course, that the Tri-State is not an organization composed of specialists. Its purpose is to serve the general practitioner. The latter are especially urged to attend the Norfolk meeting. All good physicians, whether members of the association or not, will be welcome at all the sessions.

A number of members have neglected to pay their dues. The association is in need of money, and members should send check for their annual dues to the secretary.

At the meeting last year in Spartanburg the membership was considerably increased. At the meeting in Norfolk there should be a larger increase in membership. Make of yourself a missionary for the Tri-State. Help to increase its membership.

Members who expect to attend the meeting in Norfolk in February are urged to ask for hotel accommodation in time. Reservations should be made at once. Although the Monticello will be headquarters of the association, members can be comfortably cared for by a number of other hotels, for instance, the Southland, the Fairfax, the Lorraine and the Atlantic.

Remember, if you expect to read a paper at the next meeting to send the title to the secretary at once. Pay your dues. Ask your neighbor physician to join the Tri-State. The meeting in Norfolk will be the largest the association has known for years.

Your officers live to serve you. Call on them.

W. W. Fennell, M.D., President.
Rock Hill, S. C.

Jas. K. Hall, M.D., Secy.-Treas.,
Richmond, Va.

Urology

A. J. Crowell, M. D., Dept. Editor

The Treatment of Gonococcae Arthritis With Aspirated Synovial Fluid Injected Intramuscularly. Ballenger and Elder—Surg. Gyn. and Obs., Nov., 1921.

The authors report the results obtained in 27 cases treated by this method alone.

In explanation for the inspiration which prompted this method of treatment their first case is reported in detail although this case was tubercular and not gonorrheal.

Mr. C. A. F., age 47, lumberman, reported for treatment April 7, 1915, complaining of frequent urination for eight years which had gradually grown worse until he had to void every 10 to 30 minutes; he had chills, fever, etc., which had been worse since an attack of influenza in January, 1915. He had a tubercular hip since a young man. The urine was so thick with pus and blood that it looked like bloody milk. His voice was husky from tubercular laryngitis. This diagnosis was made by a laryngologist. Tubercle bacilli were found in the sputum and in the urine. There was a hydrocele on the right side and the epididymis was tender and about the size of a large lemon. He stated that this had been swollen for a year and a half and that an abscess had formed 15 months previously. The abscess drained and was followed by a fistulous opening which persisted six months.

A cystoscopic examination showed the bladder markedly inflamed with many large, ulcerated areas. The verumontanum was in the bladder cavity as if a large ulcer had destroyed a segment of the internal sphincter. Tubercle bacilli and pus were found in the catheterized specimen of urine from both kidneys.

We decided that there was nothing we could do for him to relieve his condition and advised him to go back to the country where he could get plenty of fresh air, good food and sunshine. Before he left, he asked if we could not do something for the swelling in the scrotum. We informed him that we could tap the hydrocele and momentarily reduce the size of the mass. Then it occurred to us that nature might by some good fortune have accumulated in this fluid some antitoxic substances and so we told him that perhaps some of this fluid re-injected might benefit him and as the prospects seemed utterly hopeless, he was given 18 cubic centimeters of the fluid drawn from the hydrocele which contained enough of pus cells to make it look like cloudy urine. He returned in two days and said he was better, that there was less frequent urination and less blood in the urine. He was then given 25 cubic centimeters of the fluid and in two days reported that he was a great deal better. The injections were continued every two or three days for three weeks, at which time no more fluid could be obtained. The urine at that time looked like cloudy urine instead of like bloody milk, and the blood had been absent for a week. The epididymis had reduced to about one-fourth its former size and was no longer painful.

Encouraged by the results following this treatment in this case the same procedure was followed in the case of an acute gonorrheal arthitis.

There was a rapid gain in weight; the tubercular larynx became normal and no tubercle bacilli could be found in the urine. The urine, however, did not become clear and there were periodic attacks of cystitis.

One year later he returned with a large painful mass in the region of the left kidney. For three weeks there had been chills and fever and the urine was milky with pus. The mass was found to be a pyonephrotic kidney, which was drained. The kidney on the right side being nearly normal, the left one later was removed. The recovery was normal and there was a rapid gain in weight and strength. The urine soon became clear and there had been no return of the tubercular process. He is in good health, attending to his saw-milling in Southern Alabama. His chief complaint when last seen was that he had gotten too fat for his clothes and that the "profiteers" made it impossible to buy more.

Case I. Turk, aged 17, gonorrhoea four months; all glasses of urine cloudy; slight urethral discharge; prostate gland enlarged and much pus in the secretion expressed. The right knee had been painful and swollen for two weeks. Twenty cubic centimeters of the synovial fluid was aspirated into a sterile syringe and injected into the gluteal muscles. The fluid contained many pus cells but no gonococci could be demonstrated in the stained smear. The patient returned in two days with less pain and less swelling in the knee. Twenty cubic centimeters of the fluid was withdrawn and injected. In two days more the pain had almost disappeared and only 15 cubic centimeters of the fluid could be aspirated. This

was injected into the buttocks. Within five days more the knee was practically normal, the urine was clearer although it still contained mucous shreds and pus cells were present in the prostatic secretion. Urethral irrigations and an occasional massage of the prostrate gland soon completed the cure. There was no tenderness at the sight of the injection nor was there an indurated mass.

The 26 cases following are representative and were uniformly successful.

The treatment, naturally, is only available for those patients who have a collection of fluid in the synovial spaces or the tunica vaginalis. All of the injections were given into the gluteal muscles after withdrawing the piston of the syringe sufficiently to demonstrate that the needle had not entered a vein. The reactions following the injections were usually mild or absent. The restoration to normal was prompt in all the acute cases, and a relief of pain noted nearly always within 24 hours. The ultimate results have shown no ankylosis, either complete or partial.

Incidentally the authors quote the experience of others indicating that patients with acute traumatic synovitis recovered much more promptly when treated by auto-serotherapy than do patients where the fluid was merely drawn away and not re-injected.

The experience of the authors demonstrates two outstanding conclusions:

1. That "Little benefit may be expected from it when the hydrocele or synovial fluid is non-infected and free from pus cells, except in the acute traumatic conditions."

2. That "Prompt improvement and remarkable cures have resulted in all of the patients with acute gonococcal arthritis. Since we began to employ this method of treatment, we have found it unnecessary to resort to any other plan, such as vaccines, sera, local applications, fixation, vesiculotomy, etc."

The average number of injections administered was three to each patient, however the fluid was injected as long as there was any of it to be aspirated.

Some Hypotheses Regarding Renal Tuberculosis—Chute, A. L.: J. Urol., 1921, v, 431.

The author assumes that all tuberculous invasions of the kidney are haematogenous and secondary to a focus elsewhere in the body. In his own experience he has seen very few cases in which the infection was spread by way of the lymphatic route from a focus in the chest or from the bladder through the ureter.

The possibility that tubercle bacilli may enter the kidney by way of the blood stream from a previously existing lesion is universally accepted although there are certain objections to this hypothesis. One of these objections is that haematogenous infection would tend to involve both kidneys whereas in numerous surgical cases of renal tuberculosis the lesion is unilateral. Bilateral involvement is present in only one case in seven. Chute states, however, that clinical observations made by him seem to reconcile these apparently contradictory facts and allow him to formulate certain working hypotheses regarding the manner in which the infection occurs.

In this connection he cites what were apparently two cases of tuberculosis of the kidney, both showing in the X-ray examination small calcified areas just under the capsule. These patients were operated upon, the calcified areas being scraped away, and both of them subsequently developed surgical tuberculosis which made a nephrectomy necessary. In neither case were the symptoms or findings similar to those commonly noted in renal tuberculosis, nor did the kidneys, when exposed, have the appearance characteristic of tuberculosis. It is the author's opinion that if these patients had not been operated upon they would eventually have overcome the infection.

Reference is made also to the case of a patient who complained of pain in the renal area and whose urine contained a few red blood cells and leucocytes but no tubercle bacilli. X-ray examination was negative. In a short time this patient was relieved of the pain and went on to complete recovery. Chute is of the opinion that this case was similar to the two others reported, but not so severe.

The working hypotheses formulated by Chute are as follows:

As anatomical evidence of old tuberculous processes is frequently found in the apices of the lungs of persons who never showed definite symptoms of pulmonary tuberculosis, it is probable that incipient and very mild renal tuberculosis also is much more common than is

generally believed. If the haematogenous origin of renal tuberculosis is accepted, we must assume that the tubercle bacilli are brought in approximately equal numbers to both kidneys, that small cortical infections are common, and that in the great majority of cases these cortical infections are common, and that in the great majority of cases these cortical infections are overcome by the rich vascularity of the kidney, progressing to the stage where the condition is recognizable through the presence of pus in the urine only when the kidney is especially susceptible by reason of injury or some other cause.

When pus is found in the urine the condition has reached an advanced stage and ordinarily cannot be cured in the sense that it can be brought to a standstill before the kidney function has been destroyed. The probability that this process will overcome both kidneys is one-seventh the probability that it will overcome one kidney.

At least some of the patients who complain of dull pain in one loin and whose urine is sterile but contains a few blood cells and leucocytes are carrying on a struggle to determine whether a tuberculous infection will overcome a slightly infected kidney or whether the kidney will overcome the infection.

This last point has perhaps a practical bearing. A patient who is having occasional attacks of unexplainable acute pain or of fairly constant dull pain in one loin and whose urine shows a little blood and a few leucocytes should be advised of the importance of rest and of building up his resistance as he may be dealing with an incipient renal tuberculosis which may be cured if proper care is given.

One Hundred Consecutive Perineal Prostatectomies—Cecil, A. B.: California State J. M., 1921, xix, 287.

In this review of one hundred consecutive perineal prostatectomies Cecil found that 90 per cent of the cases were benign and 10 per cent were malignant. The youngest patient was 52 years of age and the oldest 90 years and four months. Eighteen per cent had had trouble for ten years and 10 per cent had had trouble for from eleven to fifteen years.

Cecil states that the striking feature of the entire series was that at the time of their admission to the hospital 50 per cent of the patients sought relief on account of complete retention; 55 per cent suffered considerably with pain which was usually associated with urination or the desire to urinate or followed urination; five patients had haematuria; and five had incontinence of urine due to over-distention.

Preliminary treatment consisted of catheter drainage as the author does not consider suprapubic drainage advisable as a routine measure because: (1) it is an operative procedure carried out when the patient is least able to stand any type of disturbance; (2) the suprapubic space is particularly susceptible to infection; and (3) the operation immobilizes the bladder. In every instance the essentials of Young's procedure had been carried out. The drainage tube was removed on the second day and not replaced. There were two deaths, one in the benign cases and one in the malignant cases.

In 65 per cent of the cases healing occurred within less than thirty days; in 25 per cent, in two weeks or less; and in 4, between the fifth and ninth days.

In conclusion Cecil claims that the technique of Young's perineal prostatectomy offers as advantages a much lower mortality, a higher operability rate, a convalescence less than half as long as that following other procedures, and better functional results.

Mental and Nervous

James K. Hall, M. D., Dept. Editor

As the subject of his presidential address before the American Bar Association at its annual meeting held in Cincinnati in August of the present year, Honorable James M. Beck chose as his theme the "Spirit of Lawlessness," and in masterly fashion he discussed the moral psychology of the spirit or revolt against long-standing authority. The spirit has existed always, and he cites by reference to Blackstone the time when in England it was a capital offense to cut down a tree in an orchard. But the spirit of revolt, he thinks, must have increased enormously in recent years, and he cites statistical figures that justify his assumption. In 1912, for instance, criminal indictments in

the Federal Courts were 9,503, but in 1921 these cases had increased in number to 70,000. Losses from burglaries repaid by casualty companies increased from $886,000 in 1914 to $10,000,000 in 1920. The mails, the express cars, and trains are robbed almost daily. In Chicago 5,000 automobiles were stolen from the streets within a single year. In New York City in 1917 there were 236 murders and only 67 convictions; in Chicago in 1918 there were 336 murders and only 44 convictions. In government of city, state and nation, graft has become such a fine art that the losses are estimated in millions. Annual profits from violation of the prohibition law alone, for instance, he estimates at more than $300,000,000.

The spirit of revolt is manifest indeed in every field of human endeavor. In music the discords of jazz are substituted for the cannons of harmony; in the arts relating to form the old standards of beauty have been swept away by the futurists and the cubists; in verse, where once beauty of rhythm and melody of sound were regarded as true tests of poetry, imitations of the "barbaric yawp" of Walt Whitman are now having their day, without his occasional sublimity of thought. In commerce and industry the revolt has made itself felt powerfully in bringing about disregard of the sacredness of standards and the decay of integrity. Science lends its aid in covering up defects and concealing deterioration. Respect for legal contracts is no more. Laws governing the family and the church, as well as the State, are defied. So also are the laws of nature and of God himself, in annulment of the fundamental differences of sex. The human mind of today apparently regards the lessons of the past as presumptively false. What was wrong?

The speaker quoted as sound the statements of His Holiness the Pope in an address to the College of Cardinals on last Christmas. Pope Benedict through his representatives was made acquainted with the condition of society in every civilized land. He enumerated five plagues as afflicting mankind throughout the world: the challenge to authority; unprecedented hatred between man and man; excessive thirst for pleasure; abnormal aversion to work; gross materialism with consequent denial of the spiritual in human life.

Aversion to work with loss of pride in work is seen on every hand. The introduction of mechanical power is probably responsible in large measure for this state of mind. Man no longer works; he has become an operator of a machine, and the machine now performs the work which man formerly did and in which he found great enjoyment. The necessity of physical exertion by man has been abolished by machinery. But at the same time man's power through the utilization of mechanical forces, has been enormously increased. He has become a superman of unlimited power. In the opinion of Ruskin this world-wide use of mechanical power has brought at least three individual curses. It has made possible infinite specialization, with resulting narrowness, monotony, and irrationality, or the lack of joy in personal achievement.

The specialization has brought also another evil in the group-formations of modern labor organizations, and that is the submergence of the individual into the group, so that he is lost to sight and to thought. Man is consequently ceasing to be the unit of society; the self-governing and self-conscious group is becoming the unit. Organization has been carried to an extreme, and the individual has become unworthy of thought or consideration unless he be a part of the structure of the group.

Restoration of society to normal health must be brought about in the speaker's opinion by a return of consideration for the individual himself, without reference to his group affiliation. Individual freedom must be returned to him. The law's duty must be to see to it that no organization of individuals, however powerful, whether of capital or of labor, shall be allowed to destroy or to hamper the lone man in his daily life. He must be permitted to live unfettered so long as he regards the rights of others.

The address is more largely given over to an enumeration and a description of the manifestations of the revolts against authority than to a study of the underlying psychologic causes of the whole world's boundless unrest, and little is said about therapeutics, but the address of the present Solicitor General of the United States is a brilliant presentation of his theme, and it ought to be generally read. The address is printed in full in the September number of the

American Bar Association Journal.

Dr. William A. White, Superintendent of St. Elizabeth's Hospital in Washington (once known as the Insane Asylum of the United States) writes always with a degree of charm and clarity that is the envy of his fellow-laborers in the field of psychiatry.

In the Psychoanalytic Review for October, 1921, he contributes an article entitled, "Some Considerations Bearing on the Diagnosis and Treatment of Dementia Praecox," that carries ideas and suggestions of interest to every man engaged in the practice of medicine. He confesses, of course, that although so-called dementia praecox is one of the commonest mental diseases, yet it is often difficult of diagnosis and still more difficult of treatment. The disease is exceedingly poorly understood. White formulates the theory that the symptoms of the disorder, many of them apparently wholly unrelated to each other, are manifestations of individual retrogression. The praecox patient, in his opinion, and for some reason that he does not presume to understand, backtracks in his mental and social life to some early individual period, and it is because of this psychic regression to a mental state with which we are unfamiliar, that we cannot understand the state of mind exhibited by the queer thought-processes and the peculiar conduct. The strange speech, and the catatonic physical behavior, for instance, of such a patient we cannot understand, because we are unacquainted with such phenomena in our own individual past life. If the physician is called upon to offer an explanation of the open gill-slits in a new-born child, however, he can give the satisfying theory that the sitation is a developmental defect and that a normal embryonic condition is carried over into post-partum life. Dr. White thinks of the praecox patient as regressing in the mental and social status back to a level comparable somewhat to the physical age characterized by gill arches. And just as the gill arches appear in the individual at one period of development because of racial physical inheritance, likewise in the mental domain of the praecox certain thought processes exhibit themselves as mental inheritances from racial ancestors long since become extinct. Individual primitive or archaic racial attitude to the physical body may be represented by the abnormal attitude of the praecox toward his body and its functions—that is, by his somatic delusions. In his opinion, the condition implies profound biologic defect, and, for that reason, the outlook is gloomy. But he thinks of the possibility of discovering the level to which the regression has proceeded, and of making fairly accurate evaluation of the mental residuum, and of bringing about in the individual so handicapped the largest possible degree of adjustment to the environment. The work-therapy, in its multitudinous phases, now become so pupilar in institutions, has undoubtedly been accredited with cures not properly belonging to it. White believes in the value of employment for its own sake, but he thinks of it more highly in that it brings teacher and patient into intimate association, with the result that the patient is individualized, the teacher gains a deeper insight into the patient's adjustment possibilities, and the patient likewise finds the level at which he can adjust somewhat efficiently and comfortably. The practical problem is to find the level to which the praecox patient has regressed and then to find occupation suitable for such a mental condition. The situation calls for infinite patience and individual study and it is in these respects that the modern-day treatment of mental patients in hospitals attempts to differentiate itself from the mass-treatment of such patients in insane asylums of former days.

Eye, Ear, Nose and Throat

J. P. Matheson, M. D., Dept. Editor

Eye Findings in Brain Injuries.

This important subject is treated in a very helpful manner by Nelson M. Black, M.D., Wilwaukee, Wis. "The ocular changes attendant upon injuries to the head and brain are important factors," he says, "when studied in conjunction with the general symptoms, in estimating the extent of the injury, in aiding in localization and in determining the treatment."

Great advance has been made in the knowledge of cerebral localization from experience with head and brain injuries

in the war, which will be of great help in like cases in civil practice. However, war injuries of the head and brain are described only in so far as they are likely to be paralleled in civil life.

Ocular changes in such cases result from: Increased intracranial pressure, from actual destruction or injury to the cortical visual centers or the visual tracts, or from general or localized cerebral infections. Extraocular signs—muscular paresis, paralysis and conjugate deviations. Intraocular signs are choked discs, optic neuritis and retinal hemorrhages of all grades.

The visual centers and tract manifestations are expressed in visual field defects, varying from small unilateral scotomas to bilateral total field defects and blindness.

Nystagmus may result from injury to the occipital region, probably due to the nearness of the labyrinth, the cerebellum and the medella. Latter symptoms are rare, except in penetrating brain injuries. Nystagmus has been observed after war injuries of the paretofrontal region and can only be understood on the ground of direct injury to the frontal center of co-ordinate movement. This symptom usually disappears spontaneously or after operation.

Disturbance of motility are rather infrequent following brain injuries, and are rarely permanent. Abducens and trochlearis are most frequently affected. Impaired or lost function may be due to fracture at base, basal meningitis or hemorrhage; but is usually considered due to a marked rise of intracranial pressure.

"The value of the pupil as a factor in the diagnosis of brain injuries has been greatly overrated as the appearance and activity vary greatly, depending upon the nature and localization of the trauma of the brain."

Miosis is usually present early, as the result of the concussion, followed by mydriasis. Unequal pupils may be present, or there may be miosis, if there is hemorrhage into the pons, cerebellum or the ventricles; occasionally hippus may be present, and early, Argyll-Robertson pupils. Reaction to light is frequently sluggish.

Horsley considers that mydriasis, in cases of traumatic brain pressure, occurs immediately when the intracranial pressure exceeds the blood pressure and depends on:

1. A central conditional stimulation of the sympathetic;

2. A simultaneous diminishing of the sensitiveness of the oculomotor.

It is only within the last decade that the appearance of the eye ground, as revealed by the opthalmoscope, has been utilized as on index of intracranial tension. Investigation and research have revealed that through the eye, we have two valuable means in diagnosing increased intracranial tension, i. e., the condition of the eye grounds and the character of the fields of vision, as determined by the perimeter. As a consequence, no examination of a case of suspected brain injury is complete without a thorough examination of ocular fundi, and a determination of visual fields.

There is a diversity of opinion as to the pathogenesis of changes in the eye grounds, found in heightened intracranial pressure. There are three theories, the toxic, the inflammatory and the mechanical theories. Relative to the pathogenesis of choked discs, de Schweinitz says, "In general terms, it is probable that choked disc is produced by a combination of factors. In this combination, increased intracranial tension or pressure is most prominent and the mechanical theory of its pathogenesis affords the most satisfactory explanation."

Changes in the eye may occur within a few hours after these head and brain injuries, and can hardly be explained on any other than the mechanical theory, and the mechanical theory also holds good for changes in eye grounds occurring after several days.

Further, in case of brain injury accompanying basal fracture no visible changes in eye grounds occur with free outlet of the fluids in the skull. In war injuries, on the contrary, due to the greater trauma, a large percentage showed papilledema or optic neuritis at some stage of their existence.

Many cases of brain injuries show no intraocular changes. Choked disc is found only in 80% of brain tumors. May it not be that cases with marked general symptoms, with the absence of eye ground changes, that the intraocular tension is sufficient to counteract the effects of the intracranial pressure?

Location of the injury to the brain is

a factor. In cerebral neoplasms it is well known that the tendency of the tumors to produce choked disc increases from the anterior to the posterio pole of the brain and diminishes from the cortex inward. Youth is more likely to intraocular changes in brain tumor than age.

Parsons states "any intracranial condition which impedes the flow of blood in the internal carotid may be expected to lead to passive constriction of the intraocular arterioles; but such intracranial conditions usually affect the venous sinuess even more profoundly, leading to partial blockage, with coincident slowing of the circulation. This latter effect, however, will not necessarily lead to increased ocular venous pressure, owing to the free communication with the general system of veins, which themselves anastomose so freely as to tend rapidly to the equalization of pressure." It is not without the bounds of reason to suppose that in certain individuals there may be an anomalous more free communication between the external carotid and the vascular supply of the eye, as in the lower animals, which will overcome the effect of intracranial pressure on the internal carotid in leading to passive constriction of the intraocular arterioles.

Why increased intracranial pressure, per se, does not always make itself manifest in intraocular changes is an interesting problem to opthalmologists. In the great majority of instances it is certain that after decompressive measures in those cases with choked disc and the general symptoms of increased intracranial tension, there is a marked change in the appearance of the eye grounds, which, if the pressure has not existed too long, may resume their normal appearance.

The early stages of choked disc were frequently observed by the author. A few later stages were observed in the war. There were usually in furrow wounds of the scalp, with the outer table of the skull intact and were usually of the vault. No operation had been done other than diberidement of the original wound.

There were symptoms of increased intracranial tension, but the surgeons decided against operation on the ground that there was no depressed fracture; X-ray findings were negative; the symptoms were not alarming and visual acuity was not affected. Examination of eye grounds showed marked swelling of disc, 1 D to 3 D. Operation was advised and on opening skull it was found that the inner table of the skull was comminuted, under the furrow made in the scalp by the bullet, for a distance of 1½ to 2 fingers width, with marked breaking down of the brain tissue, although the dura was intact.

Jessop calls attention to the large proportion (72% in 48 cases) of patients showing choked disc with gunshot wounds of the vault. Swelling in most cases slight, generally 1 D, seldom more than 2 D. Both discs usually choked, with other ocular symptoms rarely present, color sense and visual fields intact. On relief of intracranial pressure choked disc usually subsides in five to six days.

Fields of vision in brain tumors differ with situation of the lesion and vary with decrease and increase of pressure. This variation occurs also in brain injuries.

Occipital injuries are, as a rule, followed by hemianopsia, or as in a few cases, by complete restoration of function. In the latter cases, field defects were caused by edema, hemorrhage, which is removed by absorption, in the contraction and organization of meningeal clots, or it may be explained on v. Monakow's last theory of diaschisis.

Examination of eye grounds should be made in all cases of head injuries, and the determination of visual fields when possible. When choked disc is found together with other symptoms of increased intracranial tension, operative interference is imperative. The relief of the pressure when done in time precents consecutive atrophy of the optic nerve in almost every instance. The finding of choked disc without other symptoms of intracranial pressure is not sufficient indication for operation, unless the intraocular manifestations are progressive in character; on the other hand, the absence of choked disc should in no wise preclude operative interference when other symptoms indicate its necessity.

HENRY L. SLOAN.

Roentgenology

Robt. H. Lafferty, M. D., Dept. Editor

The following conclusions were drawn from a "Study of 76 Cases Uterine Fibroids and Chronic Metritis Treated by X-ray," by Eden and Provis as reported in the Lancet of February 12, 1921, page 309:

(1) In women over 38 X-ray treatment should be regarded as the method of choice for all complicated cases of severe haemorrhage due to chronic metritis.

(2) Cases of chronic metritis yield more readily to X-ray treatment than do fibroid tumors. The presence of inflammatory disease of the tubes and ovaries is a contra indication.

(3) Fibroids of the size not exceeding the height of the umbilicus may be treated with X-rays if the patient is over 38 years old, if the haemorrhage is of the regular monthly type, and if there is no evidence of inflammatory disease of the tubes and ovaries, or of advanced degenerative changes in the tumor.

(4) No case should be submitted to X-ray treatment without a careful gynaecological examination being previously made, to exclude malignant disease, inflammatory complications, and degenerative changes in fibroids.

(5) The risks of failure with X-ray treatment in suitable selected cases are so small as to be negligible.

(6) The X-ray menopause may be attended by more severe flushings than in the normal memopause, but in other respects there is no difference between them; there is no tendency to corpulency or to psychological changes.

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Hospital and Sanatorium

John Q. Myers, M. D., Dept. Editor

A FEW FUNDAMENTAL FACTS

By Dr. John Q. Myers,
Mecklenburg County Medical Society
May 3, 1921.

When asked by our secretary what my subject would be, I told him I had none but if he must print and send to you a program to just put down "A Few Fundamental Facts," to which, however, I am proceeding to direct your attention, which are sociological rather than medical.

A great man once said "Your opportunity confronts you, what will you do with it? Things don't turn up in this world until somebody turns them up."

We had an election last fall. All of us became very much interested. We elected a Governor along with others. The Governor was elected on a platform. He promised if elected that good government would be his motto; good roads his theme. State hospitals for the treatment and care of the unfortunate would have a great share of his time. Is he succeeding? I say, yes. He so bestirred the State with his inaugural address and his address to the Legislature that the proper machinery was put to work to get what he had promised. The $50,000,000 bond law was passed for roads. The $20,000,000 educational law was passed. Did it die? No. He kept stirring. Many said the bonds could not be sold; but we went to the financial centers and made money easy and now $10,000,000 is ready to be spent on the roads at once. The builders are getting ready to enlarge the State Hospitals and Colleges. Why? Because Governor Morrison stirred up somebody.

We elected a President of the North Carolina Medical Association. He served? Yes. Stirred up somebody? Yes. Who? The doctors of Richmond, Baltimore, Washington, etc., who filled the time and let many of our own progressive young men take a back seat and not allowed to read their papers for lack of time. The public health meeting was allowed to hold over and take up part of our valuable time. Then we voted a resolution to keep the health doctors from serving two masters—so to speak.

This was passed unanimously and ignored in the report of the nominating committee and their reports, and confirmed by the meeting assembled.

How will we ever get anywhere at this rate? I do believe in the city in which I live. I believe we have the best board of health, best nurses, and best organized clinic and health department of any city in the South. Dr. McPhaul's head is threatened by some because he does his duty; by others because he gives free treatment to some who might be considered able to pay. I will say in unity there is strength. What we must do if we desire to grow great is not the amount of money we can make, but how much good we can render humanity. Why not the Mecklenburg County Medical Society enter into one big clinic and all shoulder the responsibility of the care of the sick and spend one, two, or three hours per week at the free clinic and let our papers in the future be symposiums compiled from hospital staffs and city clinic staff? If we can do this our fame will spread beyond the border of our State and eventually our financial income will be a secondary consideration, for he who sows seed in good ground will reap an abundant harvest.

Our hospital staffs are howling about inefficient nurses. Why are they not up to par? Because the doctors do not do their part. Do we who are supposed to teach the nurses do our part? I have been told by every superintendent of nurses in the city that many of us put the lecturing to the nurses secondary on our programs. Do we expect to reap where we have not sown? Do we expect to realize where we have not invested. What manner of men are we?

The superior ones like to serve. The common crowd loves to be served. Its the cheap soul that loves to be waited on. The lady who must ring for her maid to cross the room and bring her wrap, the gentleman whose soul swells when the man servant hands him his hat and cane, are not singler. The common herd all like that. They are ordinary you might say "or nary." Just any common boor enjoys having his feet washed. The Son of God washed His disciples' feet. It is this instinct of service, this innate joy of doing something to make other people happy that is the core of politeness, of what we call good breeding. Grabbing all you can, looking out for Number One, "gittin' " a plenty while you are "gittin' " it, blowing your own horn, pushing yourself forward, shoving yourself into the best seat, all such things may be commendable enough if you like them. Only they are of the broad and wide way, and many there be that go therein. Or can you put by a strong desire, forego a cherished ambition, sternly deny yourself position, fame, money, love, yes, even life itself for the sake of a high principle? There are just a few such. You are superior. You belong to the nobility.

Pessimism is the philosophy of vulgarity. It amounts to dressing up in fine phrases—the cowardice of the spirit. Do you in your little trials despair and complain? Do you pity yourself, want to go out in the garden and eat worms and talk theoretically of wondering why you were born, and wish you were dead. Such sentiments are as common as dust in the road, ragweeds in the cow-pasture, and empty tin cans in the alley. But when all things combine to crush and humiliate you, when failure leers at you and betrayal besmirches you, do you smile and say "In the fell clutch of circumstances I have not winced nor cried aloud." "Beneath the Bludgeonings of chance, my head is bloody but unbowed. Gentlemen, I make mention of these few fundamental facts because they directly interest us all and need to be given careful thought and sober action. Then let us build three tabernacles, one for the State Society, one for our County Society and Health Department, and one for our hospitals. And when we have finished we will (not many) hear the welcome come in "yea blessed." "When I was hungry ye fed me." "When I was sick ye visited and cared for me even in the inn." "There is a place for you prepared from the foundation of the world and coveted by all people of all time." I urge that we all strive to do something for those who need our help and forget for a time the small selfish motives which we are prone to obey.

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News Items

The Southern Surgical Association held its annual meeting for the current year at Pinehurst, N. C., December 13-14-15.

The program is made up of 48 papers and in attendance were many of the country's most noted surgeons. Dr. R. L. Gibbon, of Charlotte, is chairman of the committee of arrangements. The officers of the association are: President, Randolph Winslow, Baltimore, Md. Vice-Presidents: H. H. Trout, Roanoke, Va.; J. N. Baker, Montgomery, Ala.; Secretary, Hubert A. Royster, Raleigh, N. C.; Treasurer, Guy L. Hunner, Baltimore, Md.; Council, Thos. S. Cullen, Baltimore, Md.; Isaac S. Stone, Washington, D. C.; William D. Haggard, Nashville, Tenn.; James E. Thompson, Galveston, Texas; Willard Bartlett, St. Louis, Mo.

Visiting Staff for Morganton Hospital—Governor Cameron Morrison has named Dr. Delia Dixon Carroll, of Raleigh, as a member of the Visiting Medical Staff for all State Hospitals. He has also appointed a special Visiting Staff for the State Hospital at Morganton.

The Visiting Staff of Physicians for the State Hospital at Morganton follows:

Internal Medicine: Dr. B. R. Smith, Asheville, N. C.; Dr. L. B. Newell, Charlotte, N. C.; Dr. H. B. Hyatt, High Point, N. C.; Dr. S. F. Pfohl, Winston-Salem, N. C.; Dr. H. H. Dodson, Greensboro, N. C.; Dr. Henry Glenn, Gastonia, N. C.

Eye, Ear, Nose and Throat Specialists: Dr. H. H. Briggs. Asheville; Dr. J. P. Matheson, Charlotte, N. C.; Dr. R. V. Brawley, Salisbury, N. C.; Dr. T. W. Davis, Winston-Salem, N. C.; Dr. J. W. McConnell, Davidson, N. C.; Dr. C. W. Banner, Greensboro.

The foregoing, together with the formerly appointed visiting surgeons, who are: Dr. A. G. Brenizer, Charlotte; Dr. J. T. Burrus, High Point; Dr. W. F. Griffith, Asheville; Dr. H. F. Long, Statesville; Dr. Henry Norris, Rutherfordton; Dr. J. E. Stokes, Salisbury, complete the staff for this institution.

The Seaboard Medical Society closed its annual session at Norfolk, Va., October 8th. The program for this meeting was full and every paper was intensely interesting and well worth while. The attendance throughout was very satisfactory.

New Bern, N. C., was chosen as the meeting place for the 1922 convention and the time will be the second Tuesday in December. The officers elected for the ensuing year are: President, Dr. Joseph L. Spruill, Sanatorium, N. C.; First Vice-President, Dr. Joseph T. Buxton, Newport News, Va.; Second Vice-President, Dr. W. E. Warren, Williamston, N. C.; Third Vice-President, Dr. Cora Z. Corpening, Suffolk, Va.; Fourth Vice-President, Dr. F. T. Gates, Manteo, N. C.; Treasurer, Dr. Geo. A. Caton, New Bern, N. C., re-elected; Secretary, Dr. Clarence Porter Jones, Newport News, Va., re-elected.

Nash County Medical Society—Drs. M. I. Fleming and C. T. Smith entertained the Nash County Medical Society at Rocky Mount, N. C., December 7.

The old officers of the society for the past year were: President, Dr. M. I. Fleming; Vice-President, Dr. J. P. Speight; Treasurer, Dr. C. T. Smith; Secretary, Dr. D. L. Knowles.

The new officers chosen for the ensuing year are: President, J. A. Winstead, Nashville, N. C.; Vice-President, Dr. R. H. Noell; Secretary, Dr. W. H. Dixon; Treasurer, Dr. J. A. Speight.

Richmond Academy of Medicine.

At the regular meeting of the Richmond Academy of Medicine and Surgery held on the evening of November 8, a paper was presented by invitation by Dr. W. W. Herrick, of New York City. He talked about the management and the prognosis of heart disease associated with pregnancy. Dr. Herrick's presentation of the problems were characterized by great clarity and commendable frankness. His address provoked interesting discussion by Dr. Douglas VanderHoof, Dr. Greer Baughman, Dr. M. Pierce Rucker, Dr. Ben Gray, and Dr. W. B. Porter.

Dr. Wyndham B. Blanton presented a clinical case report. A young woman of frail physique but of great mental alertness had sought of him help on account of rather frequent attacks of fainting. The most prolonged and

painstaking examinations and observation brought to light in the physical domain no departure from the normal except an orthostatic albuminuria which did not completely disappear upon the resumption of the recumbent position. Dr. Blanton spoke of the absence of a satisfying theory in explanation of so-called orthostatic albuminuria, but in this case he thought of an associated lumbar lordosis as having something to do with the kidney disturbance and of an underlying neurotic make-up as responsible for the attacks of syncope. Dr. Blanton's study of the case, extending over many months, bore evidence of the most extreme care on his part, both from the laboratory and the clinical point of view, and his paper was a model in its completeness.

"Some Problems in Connection with Surgery of the Gall Bladder" was the title of the paper read by Dr. Murat Willis. In this part of the country, at least, Dr. Willis was bold enough several years ago to advocate and to begin to practice the abandonment of drainage after cholecystectomy. For several years he has also advocated and practiced the removal of the gall bladder which exhibited any considerable degree of evidence of disease. He frequently clears out the bladder which shows little evidence of disease, and closes the incision without abdominal drainage. His paper provoked lively discussion by Dr. J. Shelton Horsley, Dr. G. A. Ezekiel, and Dr. Chas. R. Robins.

Dr. Chas. R. Robins, as chairman of a special committee, presented resolutions voicing the deep sense of loss and sorrow experienced by members of the Academy on account of the death of Dr. Henry H. Levy. After many years of poor health Dr. Levy found relief in death on October 18, 1921, at the age of 71. For more than a generation he was a member of the teaching staff of the Medical College of Virginia, and during all these years he enjoyed a large practice. He was possessed of large medical knowledge, great diagnostic acumen, and he loved and was loved by his fellowman.

At the regular meeting of the Richmond Academy of Medicine and Surgery on the evening of November 22, an exceedingly interesting and informative paper was presented by Dr. C. C. Coleman dealing with deformities, either congenital or acquired, involving the face, the nose, and the mouth. The presentation of the corrective surgical procedures was made largely by lantern slides, and the transplantation and flap-grafting methods indicated the wonderful progress that has been made in this branch of surgery, especially since the world-war. Hideous and repulsive-looking faces, under the skillful touch of the reconstructive surgeon, are made presentable and not infrequently attractive. Dr. Coleman's paper was discussed by Dr. J. Shelton Horsley who presented also by lantern slides illustrations of a few such cases on which he had operated successfully.

Dr. G. C. Woodson made a clinical case report. A physician of middle age who had been using morphia hypodermically self-administered up to 20 grains per day voluntarily placed himself in a general hospital under Dr. Woodson's care in order that the addiction might be broken up. The patient was kept under the persistent care of a competent nurse during the administration of the so-called Lambert treatment. The drug was withdrawn without considerable objection or discomfort, and the patient rapidly improved. At the end of a week, however, the patient refused to remain longer in the hospital. He continued the convalescence in the country, and after a few weeks reported to Dr. Woodson. At this time there had been a gain in weight of twenty pounds and the absence of all desire for the drug.

This case report was discussed by Dr. J. Fulner Bright, who states that his experience with drug addicts would lead to no other conclusions than that the patient was continuing the use of morphia. Dr. Bright was emphatic in the expression of opinion that such an addiction cannot be eradicated within a week.

As chairman of the committee, Dr. John N. Upshur presented resolutions expressing the profound sorrow of the members of the Academy on account of the untimely death of Dr. B. L. Taliaferro.

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Dr. S. W. Battle, of Asheville, N. C., has been recently appointed a member of the State Geological Board for a term expiring March 1, 1925, to succeed R. G. Lassiter, of Oxford, resigned.

Dr. E. D. Mann, of Saxapahaw, died November 20. Dr. Mann had practiced continuously in Chatham and Alamance counties for the past 50 years. He served four years with the Third North Carolina Cavalry during the Civil War and was seriously wounded at Ashland, Va. After the war he attended Virginia Medical College and graduated in the class of 1868.

Dr. A. C. Bulla was recently elected health officer of Wake County. He had served for several years in a similar capacity in Forsyth County.

Dr. E. F. Long, retiring health officer of Wake County, is now with the State Department of Health.

Ninth District Meeting—The Ninth District Medical Society held its annual meeting at Salisbury, N. C., October 28. About one hundred physicians attended this meeting and it was one of the best and largest gatherings this society has ever had. The program was full and very helpful in every way and the social feature of the event was a barbecue at the Country Club with the local physicians as hosts.

The next meeting of this district will be held at Morganton. Dr. G. A. Ramseur, of China Grove, was elected president, Dr. Adams, of Statesville, vice-president; Dr. I. M. Taylor, of Morganton, secretary.

Dr. J. Luther MacMillan, of Red Springs, N. C., died at his home November 7. Dr. MacMillan was 66 years old and a graduate of Jefferson Medical College of 1881. He had been confined to his home for several months prior to his death with heart trouble.

Dr. Paul V. Anderson, of Richmond, Va., at the recent meeting of the South Piedmont Medical Society in Danville, read, by invitation, a paper dealing with some phases of the pellagra problem.

Dr. Cyrus Thompson, of North Carolina, recently spent a day with friends in Richmond, Va.

Dr. N. B. Cannady, of Laurinburg, N. C., while hunting November 4, was accidentally shot in his right hand and a few shots also took effect in his face. It was necessary to amputate the hand just above the wrist.

Dr. Roy B. McKnight has been appointed a member of the medical staff at Kenilworth Hospital, Asheville, N. C.

Dr. A. M. Wellis, of Richmond, Va., read a paper on surgery of the bile tract before the recent meeting of the American College of Surgeons in Philadelphia.

Dr. Beverley R. Tucker, of Richmond, Va., has just returned from Havana, where he attended the annual meeting of the Surgeons of the Seaboard Air Line Railway. He was accompanied by Mrs. Tucker.

Dr. W. W. Fennell, of Rock Hill, S. C., also attended the meeting of the Surgeons of the Seaboard Air Line Railway in Havana.

Dr. Howard R. Masters, of Richmond, Va., was married on October 25, 1921, to Miss Bealmear Linthicum, of Fredericksburg, Va. They will reside in Richmond, where Dr. Masters is a member of the staff of the Tucker Sanatorium.

Dr. A. McR. Crouch announces the removal of his office from No. 11 North Fifth street, Wilmington, N. C., to No. 108 West Franklin avenue, Gastonia, N. C. Practice limited to diseases and nutritional conditions of babies and children.

The Augusta County Medical Association held its annual meeting in Staunton, Va., August 3rd. The following officers were elected: Dr. W. S. Whitmore, Staunton, President; Drs. John Freed, Staunton, and R. S. Griffith, Basic City, Vice-Presidents; Dr. J. F. Fulton, Staunton, Secretary; Dr. A. F. Robertson, Staunton, Treasurer.

Dr. William J. H. Booher, Oxford, N. C.; Leonard Medical School, Raleigh, 1908; died August 24, aged 40.

Howell's Hospital, Marion, S. C., was formally opened August 26th. The hospital has 20 beds and there is a negro section on the outside with ten beds, making a total capacity for 30 patients.

Publications Received

DISEASES OF THE SKIN, by Henry W. Stelwagon, M.D. Ninth edition revised with the assistance of Henry K. Gaskill, M.D., attending Dermatologist to the Philadelphia General Hospital, 1313 pages with 401 text illustrations and half-tone plates. Philadelphia and London: W. B. Saunders Company, 1921. Cloth, $10 net.

So well known is this author in the former eight editions that any review of this work might seem superfluous.

In the spring of 1919 Doctor Stelwagon began the revision of his Treatise on Dermatology for the ninth edition. Realizing that the book was of large dimensions and that the new material—the result of investigation and observation for the past three or four years—that must of necessity be incorporated would add considerably to the size, he asked Dr. Gaskell to assist him by eliminating as much of the text as possible without detracting from the value of the book. At that time Doctor Stelwagon's health and strength were very uncertain, and the effort of writing proved such a strain that he was obliged to give it up—he thought for a few months—but it proved for all time, and the world is the loser of one of its most capable writers on, and teachers of, Dermatology, and those who knew him professionally and socially felt the passing of a friend.

Using the notes of Doctor Stelwagon and following his plans and ideas Doctor Gaskill has completed the revision and presents a treatise on skin diseases which seemingly surpasses all the former editions for completeness and clearness of description.

THE SPLEEN AND SOME OF ITS DISEASES, by Sir Berkeley Moynihan, of Leeds, England. 129 pages with 13 full page diagrams, Philadelphia and London: W. B. Saunders Company, 1921. Cloth, $5.00 net.

This book contains the material upon which the author based his Bradshaw Lecture delivered at the Royal College of Surgeons of England, December, 1920.

After clearly discussing the anatomy, functions, pathology and surgery of the spleen the author follows with chapters on the various splenic diseases in the light of the latest studies and investigations of this organ.

Pernicious Anemia, Leukemia, Hodgkins Disease, Splenic Anemia, and Haemolytic Jaundice are fully discussed with diagnosis and differential diagnosis.

HISTORY OF MEDICINE, with Medical Chronology, Suggestions for Study and Bibliographic Data, by Fielding H. Garrison, M.D., Lt.-Col., Medical Corps, U. S. Army, Surgeon's General Office, Washington, D. C. Third Edition, Revised and Enlarged. Octavo of 942 pages with 257 portraits. W. B. Saunders Company, Philadelphia and London, 1921. Cloth, $9.00 net.

This edition has been made more complete than the former editions, in the way of recording facts not heretofore known. New matter has been added on the doctrine of the origin and transmission of ethnic culture; on Chinese medicine; on the history of pediatrics, dentistry, public hygiene, military medicine, and medical lexicography; on the earlier nuclei of medical education in the U. S.; and on recent Japanese, Spanish and Latin-American medicine.

Any history is valuable only as it enables the present to avoid the errors and emulate the successes of the past. It is to the science and art of medicine that the human race must look if it is to perfect and fit itself for the gigantic social tasks and problems which are bound up with its future development.

This work throughout is well written and presents the history of medicine in a very interesting and impressive style.

SURGICAL ANATOMY, by William Francis Campbell, M.D., Surgeon-in-Chief at Trinity Hospital, Brooklyn, N. Y.; some time Professor of Anatomy and Professor of Surgery Island College Hospital. Third edition, revised. 681 pages with 325 original illustrations. Philadelphia and London: W. B. Saunders Company, 1921. Cloth, $6.00 net.

As anatomic accuracy is the keynote of surgical technic so it has been the author's keynote in the preparation of his volume.

His purpose clearly has been to pre-

sent anatomic facts in terms of their clinical values and to properly appraise those structures and regions which have a practical interest for the surgeon.

APPLIED PSYCHOLOGY FOR NURSES, by Mary F. Porter, A.B., Graduate Nurse, Teacher of Applied Psychology, Highland Hospital, Asheville, N. C. 172 pages. W. B. Saunders Company, Philadelphia and London, 1921.

Why help some people back to physical health if they must carry with them through a prolonged life the miseries of a sick attitude?

It is not only the privilege but also the duty of every nurse to work for health of mind and health of body as inseparable. It is her duty to strive to imbue her patient with a Will to Health and to treat a sick attitude as carefully, patiently and intelligently as a sick body.

This book deals with the simple principles of psychology only as the nurse can immediately apply them.

Doctors and nurses are realizing as never before the power of mind over body and the hopelessness of trying to cure the one without considering the other.

"Psychology is the science of mental life, both of its phenomena and their conditions."

"Consciousness, then, in its elements, is the simplest mental reaction to what the senses bring."

"Mind, the flow of consciousness."

"Psychology and Health."

"Variations from normal mental processes."

"Attention the root of disease attitude."

"Getting the patient's point of view."

And finally, the last two chapters:

"The Psychology of the Nurse."

"No nurse is competent to help her patient to overcome any curable physical weakness, and keep the mind serene in the face of the incurable, until she herself has learned that the will to health is capable of transforming disease of body, from disaster, into health of mind and soul."

The Soul's Quest for a Friend.

Life is spent in a search for sympathy and understanding. We have many needs in this world—food, clothing, shelter, and a chance to work. But the great need is some one who is a true companion of the soul, receiving the confidences and confessions we long to make, giving back the encouragement we require, the affection without which we go famished through the years. Such a friendship is hard to establish. It demands time, and trust, and full appreciation of virtues as well as sensitiveness to defects, but always an unfailing love that forgets the evil and treasures the good. Stevenson says in a fine paragraph: "In this world of imperfections we gladly welcome even partial intimacies. And if we find but one to whom we can speak out our heart freely, with whom we can walk in love and simplicity without dissimulation, we have no ground of quarrel with the world or God." Most of us have acquaintances without number, associates in groups, companions and comrades whose society is a comfort and a pleasure. But fortunate above most is the one who in all the fine intimacies of affection and self-revelation has—a friend.—The Christian Century.

It cost so little! I wonder why
We give it so little thought;
A smile; kind words; a glance; a touch;
What magic with them is wrought.

If you see a tall fellow ahead of a crowd,
A leader of men, marching fearless and proud,
And you know of a tale whose mere telling aloud
Would cause his proud head to in anguish be bowed,
It's a pretty good plan to forget it.

If you know of a skeleton hidden away
In a closet and guarded and kept from the day
In the dark; and whose showing, whose sudden display
Would cause grief and sorrow with life long dismay.
It's a pretty good plan to forget it.

If you know of a thing that will darken the joy
Of a man or a woman, a girl or a boy,
That will wipe out a smile or the least way annoy
A fellow, or cause any gladness to cloy,
It's a pretty good plan to forget it.

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Fanning the Flame to put out the Fire

"FANNING the Flame," is exactly what is being done when ice packs are used in treating pneumonia. Cold applications to the chest will drive the blood from the superficial circulation to an already congested and engorged lung.

Antiphlogistine
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applied warm and thick over the entire thoracic wall, relieves the congestion by increasing the superficial circulation. The cutaneous reflexes are stimulated, causing contraction of the deep-seated blood vessels. The overworked heart is relieved from an excessive blood pressure, pain and dyspnoea are lessened, the elimination of toxins is hastened and the temperature declines.

Send for "The Pneumonic Lung" booklet.

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NEW YORK

Migraine Therapy.

Bernard Fantus, Chicago (Journal A. M. A., Aug. 7, 1920), has used with excellent results in the treatment of migraine a mixture recommended by T. Lauder Brunton consisting of sodium salicylate, 1 gram, and potassium bromid, 2 grams. It is essential that the dose be given at the earliest possible moment when the headache is approaching; best, indeed, that it be given before it sets in by taking advantage of the signs by means of which these patients know that they will have a headache. Fantus likes to impart effervesence to the medicine in the belief that it favors its efficiency and retention. If the whole dose is vomited up, the patient might be able to retain a quarter of it taken in a wine-glassful of seltzer water every fifteen minutes. If a single dose does not suffice to jugulate the headache, a further dose may be taken hourly, until phenomena of salicylism, such as ringing in the ears, compel discontinuance. Fantus prescribes the remedy in this form:

	Gm. or Cc.
R Sodium calicylate	6|0
Potassium bromid	12|0
Sodium bicarbonate	12|0

Mix and divide into six blue powder papers.

Tartaric acid	10|8

Divide into six white powder papers.

Label: Mix contents of a white and a blue paper in half a glass of water. Repeat dose hourly if required.

Early Active Motion in Intra-Articular Fractures.

Among the advantages of the method of treatment mentioned by Robert D. Schrock, New York (Journal A. M. A., Nov. 13, 1920), are: the mental relief to the patient when he sees the joint in motion; his vision of a stiff joint is dispelled early and co-operation is all the more hearty. Ischemic paralyses with their disastrous outcome are avoided. Muscle tonus and volitional control of muscles are maintained. Temporary pathologic changes in muscles are more quickly overcome, and the persistent fibrous degenerations are avoided. There will be less chance for the calcareous degenerations in muscles and ligaments about the joint. There is less chance for a complication of plastic adhesive synovitis and the residual crepitating joint. The absorptive changes in bone, the decalcification from disuse, are reduced to a minimum, if not entirely avoided. There is less danger of ankylosis, fibrous or bony. The method obviates the too frequent procedure of breaking up adhesions under anesthesia, with repeated injury to soft parts and increased functional damage.

Pharmaceutical Barnums.

Does the public love to be humbugged? We doubt it. That we, whether sage or fool, are humbugged is undeniable. We are humbugged just to the extent that we are ignorant. There lies one of the most powerful factors operating to the advantage of the "patent medicine" maker and the quack. The layman's ignorance of the possibilities and limitations of drugs is wide and deep. Hence the ease with which he is fooled on this subject. A seeming frankness in advertising being the order of the day, the nostrum maker makes a pretense of telling what is in his stuff without disclosing any facts that will tend to lift the veil of mystery and thus destroy his greatest asset. So the exploiter of nostrums to the medical profession, realizing that at least a pretense must be made of giving the composition of medicaments offered to the physician, declares that his clay poultice has for its base "anhydrous and levigated argillaceous mineral." This sounds much more imposing than dry and finely powdered clay, and satisfies by its very sonorousness. Now comes a product exploited chiefly to members of the dental profession but also, it seems, to physicians. Tabelts, "activated tablets," if you please! They are "an anodyne, analgesic febrifuge sedative, exorcising (sic!) antieuralgic and antirheumatic action." And their composition? Simply "an activated, balanced combination of the mono-acetyl-derivative of para-amidophenetol together with a feebly basic substance in the alkaloidal state from the Thea-Sinensis." As clear as the Missouri River! Some day some dentist or physician is going to investigate and find that this awe-inspiring, poly-syllabic example of exuberant verbosity means nothing more mysterious than our old friends acetphenetidin (phenacetin) and caffein. In the meantime, the exploiters may smile softly and murmur: "Barnum was right!" —Jour. A. M. A., Jan. 1, 1921.

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In acute colds of the nose and throat Pond's Extract is a remarkably agreeable remedy. Used as a douche or gargle---a tablespoonful to a half glass of warm water---it promptly allays irritation, reduces congestion and gives gratifying relief from the smarting and stinging that are always distressing.

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Diphtheria Antitoxin and Diphtheria Bacilli.

The well established curative properties of diphtheria antitoxin must not be confused with its possible value as a prophylactic against the disease. Antitoxin is commonly employed by injection to detoxicate or "neutralize" the circulating toxin elaborated by the infective bacillus. Attempts have been made to apply the same remedial agent locally in the pharynx and nares with the hope of eradicating the objectionable micro-organisms that may have found lodgment there. A recent writer admits that negative cultures may sometimes be obtained after such local treatment with antitoxin, but he adds that this does not constitute conclusive proof of a bactericidal potency. The disappearance of Klebs-Loeffler bacilli from a membrane bathed with antitoxin may be due to mechanical effects that might equally well be brought about by cleansing with suitable saline solutions. The fact that diphtheria organisms grow luxuriantly in antitoxin speaks against any direct germicidal virtue. Investigators at the Johns Hopkins have attempted to determine more adequately whether subcutaneous administration of diphtheria antitoxin exerts any influence more indirectly in preventing lodgment and growth of diphtheria bacilli in the nasopharynx of individuals thus treated. The results were entirely negative.—Jour. A. M. A., Jan. 1, 1921.

Chaulmoogra Oil and Tuberculosis.

Washington—The recent widely circulated statement that the U. S. Public Health had found that chaulmoogra oil was as efficacious in the treatment of tuberculosis as it had been shown to be in that of leprosy is said by Surgeon General Cumming to be unwarranted. Experiments made some years ago with the oil gave no definite results. Recent experiments with the ester, or derivatives, have been begun because of hopes based on some similarities between the bacilli of leprosy and those of tuberculosis; but these have not proceeded far enough to indicate what results will be obtained.

The next meeting of the Tri-State Society will be held in Spartanburg, S. C., Feb. 16-17.

Principle of Federal Aid Extension Sound and Beneficient.

Washington. — "A short-sighted view"; was Surgeon General Cumming's terse comment on the opinion expressed at the recent Bankers' Convention that federal aid should not be given to states for activities carried on in State and local communities. "In health work, especially," said the Surgeon General, "it is extremely important to recognize that the prevalence of communicable diseases in one part of the country is of very direct influence on the people elsewhere. Thus the investigations of the U. S. Public Health Service have clearly shown that the use of a polluted water supply in some remote rural districts has often resulted in extensive outbreaks of typhoid fever in large cities hundreds of miles away; the presence of malaria in certain parts of the south has exacted a heavy economic toll from the country as a whole, for example, by raising the cost of cotton to the consumer; the northern investor has paid dearly for the continued prevalence of hook worm disease in various parts of the country, for where this disease pervails labor efficiency is seriously reduced."

"When the circumstances are carefully studied it is clear that the control of disease is not merely a local responsibility, but a joint responsibility of federal, State and local authorities.

"For every dollar of federal money spent," said Surgeon General Cumming, "we have secured five or six dollars worth of effective health work. Under the cost-sharing principles of the existing law, the Public Health Service has been able to effect very great sanitary improvements at a very minimum of expense. It is the judgment of all who have studied the results of this co-operative effort that the principle of the federal aid extension under which this work has been carried on is not only thoroughly sound but has proven of the highest benefit to the country as a whole."

To be popular and receive applause at an occasional public banquet is unworthy of special attention. But that man may well boast whose home life is such that he is popular at his own breakfast table.

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Reclamation of Physically Handicapped.

The knowledge that more than three times as many men and women were being disabled in industry annually as were disabled in the entire U. S. Army, Harry E. Mock, Chicago (Journal A. M. A., Nov. 20, 1920), says has awakened the nation's conscience to the need of rehabilitating these unnfortunates and of preventing such a casualty list. In different parts of the country, volunteer and government agencies are endeavoring to solve this problem. Industrial medicine and surgery has in a number of large industries demonstrated the practicability of a human maintenance department which conserves the working force and reclaims the disabled. The work of reconstruction and rehabilitation of the disabled soldiers, while not completed, has developed and proved broad principles of reclaiming the handicapped. A reclamation service to be complete must combine the efforts of medicine, education and industry. It must include the following services: (a) Prevention of accidents and disease. (b) Improved hospital, medical and surgical services. As an adjunct to these there must be provided better convalescent care. (c) Vocational training of the handicapped when needed. (d) Proper placement of the physically and mentally handicapped on jobs where they can be efficient with "safety to themselves, to their fellows and to property." (e) Their continued supervision until assured that this reclamation service is completed in every instance. By a broader conception of our duty to handicapped individuals and by a closer co-operation with the various lay agencies, the medical profession can render a great service in conserving and reclaiming the nation's man power.

Diaphrargmatic Hernia Diagnosed During Life.

In the case cited by Milton M. Portis and Sidney A. Portis, Chicago (Journal A. M. A., Nov. 6, 1920), the diagnosis was based on the roentgenoscopic findings. On giving barium in buttermilk, the stomach was found in this pouch and to its left the splenic flexure of the colon was seen. This was more apparent when the patient was in the reclining position. The stomach did not show an hour-glass appearance. Food dropped readily from the part above the bow line of the diaphragm into the part of the stomach below and the stomach emptied in normal manner. The duodenal bulb was normal. The liver shadow was normal and there was no tenderness over the appendix or the gallbladder.

How Pediatric Teaching of Nutrition May Affect the Nation's Welfare.

It is the opinion of Henry Dight Chapin, New York (Journal A. M. A., Aug. 7, 1920), that pediatric teaching of nutrition plays an important part in national affairs. Practically all experiments in nutrition, whether conducted on animals or on human beings, show that the most efficient foods are cereals supplemented by milk and green vegetables. One of the most active causes of social unrest and discontent is the high cost of living, and this high cost is largely due to false theories of what is really needed for proper nutrition. One way to lessen this high cost is to diminish the use of animal food and depend more on milk, cereals and vegetables. Proteins, carbohydrates, and even to a certain extent fats, can thus be satisfactorily administered. Pediatricians can render the nation no greater service than to start the feeding of infants and children with foods that will be efficient economically as well as physiologically. Habits and tastes formed in early years have much to do with food customs lasting all through life, and children should be taught to live on simple, nutritious and in expensive foods. This should form part of their education. The palate must be educated as well as the brain.

Orchitis From Mumps.

It is asserted by Edgar G. Ballenger and Omar F. Elder, Atlanta, Ga. (Journal A. M. A., Nov. 6, 1920), that the present method of treating orchitis caused by mumps is inadequate. This is shown by the large number of atrophied testes observed. The rational plan of procedure, which they have adopted, is to incise the tunica albuginea and relieve the pressure, and at the same time allow the escape of some of the toxic substances produced by the organisms which cause mumps. This must be done early in the disease before the necrotic process has become established, just as in strangulated hernia the operation should be performed early if resection of the intestine is to be obviated.

Enlargement of Hospital at Tucson.

Washington, D. C.—The U. S. Public Health Service is enlarging its hospital at Tucson, Ariz., so as to provide for 200 more patients than it now accommodates, and for the necessary increase in hospital personnel. The enlargement is necessary to accommodate the large increase in the number of patients in this vicinity.

The next meeting of the Tri-State Society will be held in Spartanburg, S. C., Feb. 16-17.

For Sale—The library of 10,000 volumes belonging to the late Dr. E. C. Register is for sale. While the greater part of this library consists of Medical and Scientific Works there are also many volumes and complete sets of Literature.

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Method of Treating Congenital Syphilis.

A method of using specific drugs is formulated by John A. Fordyce and Isadore Rosen, New York (Journal A. M. A., Nov. 20, 1920), which, by its simplicity of application and results, may justify its further employment by those who have to do with sufferers from syphilis. Nea-arsphenamin and mercury are used intramuscularly with a special needle to insure the proper location of the drugs in the gluteal muscles. If the infant is very much under weight with a poor musculature, mercury alone is given at weekly or biweekly intervals until there is an improvement in the general condition, after which the injections of neo-arsphenamin are begun. The mercurial employed is the mercuric chlorid put up in palamtin in individual colapsible ampules in doses of from one-tenth to one-eighth grain, or larger for older children. The object in giving a soluble mercury in oil is to favor slow absorption of the drug. In this form it requires about three or four days for absorption. The neo-arsphenamin is put up in indiviual glass ampules containing from 0.1 to 0.2 gm. and large enough to hold to 5 c.c. of solution, the object being to dissolve the drug in the original container. After the ampule has been immersed in alcohol to insure its proper sealing and sterilization, it is dried with sterile gauze, the end broken off, and from 2.5 to 3 c.c. of cool sterile, freshly distilled water injected into it by means of a syringe. Then a Luer mercury needle long enough to reach to the bottom of the ampule is attached to the latter, and the fluid is drawn into the barrel, alternately expelling and drawing it up to hasten complete solution. The complications following the intramuscular injection of neo-arsphenamin such as abscesses and infiltrations, can be avoided if the drug is injected deep into the muscle. To prevent its leaking into the subcutaneous and adipose tissue, the authors have devised a special needle. After the injection, the needle is rapidly withdrawn and a cotton pledget held firmly over the site for a few minutes. The site of injection is the same as for the mercurial treatment; half of the solution is injected into each buttock previously cleansed with tincture of iodin.

Chiropractic Candor.

In Butte, Montana, recently there was a convention of "chiropractors." This august assembly was addressed by one of its shining lights—Mr. Palmer, of Davenport, Iowa, "the Fountain Head of Chiropractic." To the local newspapers Mr. Palmer explained:

"Our school back at Davenport is established on a business and not a professional basis," Mr. Palmer said. "It is a business where we manufacture chiropractors. They have got to work just like machinery. A course of salesmanship goes along with their training. We teach them the idea and then we show them how to sell it."

Commendably frank! They do work like machinery; from the eyebrows down. The Journal has always held that "chiropractic" is a trade and not a profession; Mr. Palmer's admission makes it unanimous.—Jour. A. M. A., Nov. 6, 1920.

Occluded Renal Tuberculosis.

W. R. Braasch, Rochester, Minn. (Journal A. M. A., Nov. 13, 1920), states that renal occlusion occurs in about 10 per cent of the cases of chronic renal tuberculosis. It can be recognized by means of clinical, roentgenographic and cystoscopic data in fully 90 per cent. The usual symptoms are persistent frequently, dull pain or abdominal tumor; they usually extend over a period of many years. The occluded kidney may be a focus of infection, if the occlusion is of recent occurrence. If it has existed for many years it usually becomes sterile. In the presence of persistent frequency, dull pain or abdominal tumor, nephrectomy is indicated. The postoperative results are usually excellent, with recovery from the various symptoms. In cases of bilateral tuberculosis, the removal of an occluded kidney will not benefit the patient and operation should not be performed.

A chip on the shoulder is too heavy a piece of baggage to carry through life.

Observe all men—thyself most.—Franklin.

The greatest panacea for sorrow is work.—Lauder.

Laziness and failure are twins.

Notice To Physicians in North and South Carolina

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The Diagnosis of Human Plague.

C. L. Williams, New Orleans (Journal A. M. A., Aug. 7, 1920), emphasizes the importance of being able to recognize plague in the human being because it is only a matter of time when this disease will appear in some of the seaports of the United States. When infection does occur, the first observed manifestation will be a human case, and for the diagnosis of this dependence must primarily be placed in the practicing physician. Text books give little attention to plague, and the descriptions of the disease are usually generalization without outstanding points that may stay in the reader's memory. There are good descriptions of plague in the literature, but mostly these are in books on tropical medicine, too seldom studied by the average physician. Therefore Williams emphasizes the "high points" of plague without attempting to give a very detailed description.

The Seven Wrong Things.

Haven't you ever been coming down Main Street,
And seen a crowd at the corner,
And asked somebody what was the meeting about,
And had him say: "There's a guy had a fit?"
And then
In your perfectly natural curiosity to see this guy,
And what he looked like in a fit,
Probably you joined the crowd
With a good deal of force,
So that you got about halfway in the center,
And then you still couldn't see the guy,
And you got mad at your neighbors because they wanted to see too,
And you pushed some more.
And by and by you got in the center.
And it was kind of disappointing,
Because the guy lay perfectly still,
And wasn't frothing at the mouth or anything.
But he looked sick and you said angrily:
"Ain't anybody going to do anything for him?"
Although there were six people doing six different things for him already
And then perhaps you tried to do something too—
Lift up his head or something—
Because you thought you ought to.
But the six others objected.
And you got in a row,
And had words.
And then the doctor came.
And he said all seven of you were wrong and the right thing was something none of you had thought of and you'd probably made him a lot worse than if you left him alone.
And after you got home you began to wonder
Why you hadn't thought of that eighth thing that was right,
Instead of one of the seven that was wrong.
And you thought how important you'd have felt if you'd really known what to do.
And how you'd have probably saved his life,
And been mentioned in the newspaper,
If you'd really known what to do.

Morale: Some doctors act just that way. In the excitement of the moment calm judgment is dethroned. Then after you go home it all comes clear before you.

Nothing is so important for a doctor as calm self control and the ability always to do the best he knows, and always strive to know more.

Movable Kidney With Unilateral Nephritis.

The cases of two patients cured by operation are reported by Joseph M. Cadwallader and Alexander A. Brown, San Antonio, Texas (Journal A. M. A., Nov. 6, 1920). These two cases Cadwallader thinks are rather instructive, serving as they do to remind one that, while a mere movable kidney may constitute a negligible condition, it may sometimes be the seat of serious organic mischief amenable to proper treatment; that not every neurotic with a movable kidney is to be passed by or treated merely as such; and, above all else, that every patient with a movable kidney and nephritic urine must be subjected to ureteral catheterization, and each renal function and excretion be investigated separately. Chronic bilateral nephritis means Bright's disease, with its grave prognosis; chronic unilateral nephritis, from this particular cause, is curable and, hence, a vitally different matter.

In Medical Circles

it has gradually but surely become an established belief that quality is a fundamental asset, that it pays — and pays well — to use the best. In other words, that the time and effort employed in specifically ordering a product that has been shown to be the most effective and dependable of its class — and in making sure that it is the one dispensed by the druggist and actually used by the patient — is time and effort well spent.

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Plain wood or enameled metal are good materials for waiting room furniture. If it is desired to make the waiting patients more comfortable by providing upholstered furniture, the upholstery material should be the pyroxylin coated leather substitute type, which is waterproof and therefore not injured by frequent washing with soap and water.

Bacterial Vaccines (Sherman's).— The organisms in Sherman's Vaccines are grown on ascitic agar which makes them more nearly conform to the biochemical construction of organisms responsible for human infections. They are the only vaccines produced on a large scale that are sterlilized without heat. This avoids the possibility of destroying the delicate bacterial protein which is so liable to follow from the heat killed method of sterilization. This results in the production of a vaccine high in antigenic and keeping qualities. All vaccine suspensions are carefully counted and standardized so that a change can be made from one package of vaccine to another of the same kind with the same therapeutic response.

Dose—For the heavier suspensions such as Nos. 6, 22, 25, 35, 36, 38, 40, 42, 43 and 49, the first dose is 0.2. (c.c.) or about 3 minims; in chronic cases this dose is repeated at intervals from three to seven days. In extensive acute infections with high fever the dosage may be 1 mil. given every day until the temperature subsides and then at longer intervals.

When, particularly in grave cases, valuable time may be lost in securing the variety of vaccines especially recommended, it is always advisable to use the vaccine at hand which contains the predominant organisms of the disease to be combated.

Infants and children who are very tolerant to Bacterial Vaccines should receive ¼ to ½ the adult dose.

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Synthetic Drugs: Tannin Compounds.

Only one type of the tannic acid compounds studied by P. N. Leech, Chicago (Journal A. M. A., Oct. 23, 1920) completely resists the action of the gastric juice and is broken down in the intestine according to theory, i. e., the diacetyl tannic acid compound. "Acetannin Calco" is satisfactory (however, only one specimen of this product was available when the study was made). "Tannigen" is fairly satisfactory in some instances; in others it was not; the present market supply does not appear to be of reliable composition.

What sculpture is to the block of marble, education is to the human mind. —Addison.

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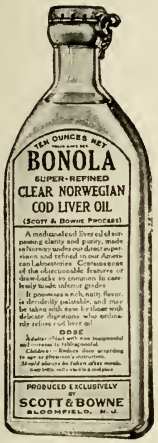

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The next annual meeting of the Tri State Medical Association will be held in Spartanburg, S. C., Feb. 16-17, 1921.

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To South Carolina Medical Society—Dr. D. A. Stanton, High Point; Dr. W. A. Monroe, Sanford; Dr. W. R. McCain, Waxhaw.

Committees Elected.

Scientific Work—Dr. E. J. Wood, Wilmington; Dr. Richard N. Duffy, New Bern; Dr. C. A. Shore, Raleigh.
Publication—Dr. P. B. McCain, Sanatorium; Dr. C. A. Julian, Thomasville; Dr. W. L. Dunn, Asheville.
Obituaries—(Continued) Dr. Arch. Cheatham, Durham; Dr. E. G. Moore, Elm City; Dr. F. R. Harris, Henderson; Dr. N. D. Bitting, Durham; Dr. B. O. Edwards, Asheville.
Public Policy and Legislation—Dr. H. A. Royster, Raleigh; Dr. L. B. McBrayer, Sanatorium; Dr. Cyrus Thompson, Jacksonville.
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The next annual meeting of the North Carolina Medical Society will be held in Pinehurst, April, 1921.

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"FANNING the Flame," is exactly what is being done when ice packs are used in treating pneumonia. Cold applications to the chest will drive the blood from the superficial circulation to an already congested and engorged lung.

Antiphlogistine
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applied warm and thick over the entire thoracic wall, relieves the congestion by increasing the superficial circulation. The cutaneous reflexes are stimulated, causing contraction of the deep-seated blood vessels. The overworked heart is relieved from an excessive blood pressure, pain and dyspnoea are lessened, the elimination of toxins is hastened and the temperature declines.

Send for "The Pneumonic Lung" booklet.

THE DENVER CHEMICAL M'F'G. COMPANY
NEW YORK

A Text-Book of "Pathology"—By William G. MacCallum, M. D., Professor of Pathology and Bacteriology, Johns Hopkins University, second edition. Thoroughly revised. Octavo volume of 1155 pages with 575 original illustrations. Philadelphia and London; W. B. Saunders Company, 1920 Cloth, $10.00 net.

This work represents in its order and contents the course in Pathology given in the second year to the students of the College of Physicians and Surgeons. The general principles of Pathology are discussed as illustrated by a study of the commoner and more important diseases.

The whole plan of the book seems to be to discuss diseases as far as possible upon the basis of etiology, and the usual subdivision of material according to its anatomical distribution has not been employed.

The discussion of tumors has been considered seperately for the reason, as the author states, that they seem to be controlled so little by the laws which govern other pathological processes.

After a few chapters devoted to the general working principles, with illustrations from the most common conditions the rest of the book is divided into chapters which deal with various types of injury and their immediate and remote effects.

Claiming that Pathology and Clinical Medicine are, after all, the same thing viewed from slightly different angles, the author speaks much of the disturbances of function and chemical interchange in the course of disease and even describes symptoms, so that the reader may at times think he is reading a treatise on Clinical Medicine.

"The Roentgen Diagnosis of Diseases of the Alimentary Canal."—By Russell D. Carman, M.D., Head of Section of Roentgenology in the Division of Medicine, Mayo Clinic and Professor of Roentgenology (Mayo Foundation), Graduate School of Medicine, University of Minnesota, Second Edition Thoroughly Revised. Octavo of 676 pages with 626 original illustrations. Philadelphia and London: W. B. Saunders Company, 1920. Cloth, $8.50 net.

This second edition has revised and brought up to date the chapters dealing with the various phases of the subject. The edition has been enlarged by 98 pages and has added 122 illustrations. Of the two new chapters one is devoted to the "hour glass" stomach and another to a chronological abstract of the published work on pneumoperitoneal diagnosis of abdominal lesions.

For the sake of the lessons they teach the author has quite freely recorded and analyzed the mistakes that have been made.

The records of such findings and facts as have been verified by experience have been selected and arranged in a systematic manner.

A Text-Book of the "Practice of Medicine."—By James M. Anders, M.D., Ph.D., LL.D., Professor of Medicine Graduate School of Medicine, University of Pennsylvania, fourteenth edition, thoroughly revised with the assistance of John H. Musser, Jr., M.D., Associate in Medicine, University of Pennsylvania. Octavo of 1284 pages, fully illustrated. Philadelphia and London: W. B. Saunders Company. 1920, cloth $10.00 net.

Dr. Anders comes back again with the fourteenth edition of his "Practice of Medicine."

This edition has been thoroughly revised and really brought up to date. In this revision the author has paid especial attention to the practical phases of internal medicine, with the aim to aid the student and practitioner to gain a knowledge of methods of a practical kind for the observation and detailed study of disease.

For the same avowed purpose of making the work the most practical those complaints in general, which come most frequently under notice have been given chief attention. However, many diseases which have recently come more in prominence because of newly developed facts have been freely discussed, and these further studies have incorporated the relation of such diseases to foreign protein.

"Heart Block" as determined by the electrocardiograph, is discussed from the clinical standpoint.

Among some of the complaints not discussed in former editions are Bronchial Spirochetosis, Streptococic (Hemolytic) Pneumonia, Disordered Action of the Heart, Chronic (Syphilitic) Aortitis, Epidemic Encephalitis, Methyl Alcohol poisoning, Botulism, etc.

PRELIMINARY PROGRAM OF TWENTY-THIRD ANNUAL SESSION OF THE TRI-STATE MEDICAL ASSOCIATION OF THE CAROLINAS AND VIRGINIA, SPARTANBURG, S. C., FEBRUARY 16-17, 1921.

"Where no council is, the people fall; but in the multitude of counsellors there is safety."

OFFICERS—SESSION 1921

Dr. J. P. Munroe, Charlotte, N. C., President.
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Dr. Greer Baughman, Obstetrics, Richmond, Va.
Dr. Elbyrne Gill, Eye, Ear, Nose and Throat, Roanoke, Va.

LOCAL COMMITTEE OF ARRANGEMENTS

Dr. Baxter Haynes, Chairman; Dr. S. T. D. Lancaster, Dr. G. D. Wilson, Dr. H. R. Black, Dr. D. L. Smith.

For the Entertainment of the Visiting Ladies

Mrs. W. B. Lyles, Chairman; Mrs. D. L. Smith, Mrs. Baxter Haynes, Mrs. J. R. Sparkman, Mrs. Samuel Orr Black, Mrs. J. E. Edwards.

Wednesday, February 16, 10 A. M.

Place of Meeting—Hotel Cleveland.

The Association will be called to order by Dr. Baxter Haynes, Chairman of the Committee of Arrangements.

Invocation—Rev. A. D. P. Gilmour, D. D., Pastor of the First Presbyterian Church, Spartanburg, S. C.

Address of Welcome on Behalf of the City of Spartanburg and the Medical Society of Spartanburg—Dr. H. R. Black, Spartanburg, S. C.

Response—Dr. M. L. Townsend, Charlotte, N. C.

President's Annual Address—Dr. J. P. Munroe, Charlotte, N. C.

Papers and Discussions.

Group 1—Gastro-Intestinal.

(a) Medical.

"Splanchnoptosis"—By Dr. Matt. O. Burke, Richmond, Va.

"Diagnosis of Some Common Stomach Troubles"—By Dr. Alex. G. Brown, Jr., Richmond, Va.

"Syphilis of the Stomach"—By Dr. Frederick C. Rinker, Norfolk, Va.

"The Typhoid Carrier ,with Report of Case"—By Dr. F. M. Durham, Columbia, S. C.

"The Dwarf Tape Worm (Hymenolepis nana) as the Cause of Some Diarrhoeas of Obscure Etiology, with Report of Case"—By Dr. Jas. M. Northington, Charlotte, N. C.

(b) Surgical.

"Some Theories Regarding the Cause of Oblique Inguinal Hernia and a Suggestion as to Technique in Operating"—By Dr. J. W. Henson, Richmond, Va.

"Meckel's Diverticulum. Report of Cases"—By Dr. Carrington Williams, Richmond, Va.

"Tumors of the Large Intestine, with Report of Two Recent Operative Cases"—By Dr. Robt. T. Ferguson, Gaffney, S. C.

"Recurring Volvulus of Descending Colon and Sigmoid Flexure with Megacolon"—By Dr. Murat Willis, Richmond, Va.

"Intestinal Obstruction"—By Dr. C. M. Rakestraw, Chester, S. C.

"Pyorrhoea Alveolaris as an Etiological Factor in the Non-Relief of Symptoms After Surgical Operation"—By Dr. George H. Bunch, Columbia, S. C.

"Injuries to the Bile Tract in Cholecystectomy"—By Dr. W. H. Goodwin, University, Va.

"A Direct Method of Biliary Drainage"—By Dr. Heath Nisbet, Charlotte, N. C.

"Conditions Simulating Duodenal Ulcer"—By Dr. Henry Norris, Rutherfordton, N. C.

"Report of Cases of Acute Ruptured Ulcers of the Duodenum"—By Dr. John A. Williams, Greensboro, N. C.

"Perforated Duodenal Ulcer with Report of Four Cases"—By Dr. B. C. Willis, Rocky Mount, N. C.

"The Surgical Treatment of Certain Types of Dyspepsia"—By Dr. Stuart McGuire, Richmond, Va.

1:00 P. M.—Luncheon.

2:00 P. M.—Afternoon Session.

Group 2—Genito-Urinary.

"Lesions of the Female Urethra as a Cause of Urinary Disturbance"—By Dr. W. B. Lyles, Spartanburg, S. C.

"The Treatment of Varicocele, with Report of Three Hundred Cases"—By Dr. J .Richard Allison, Columbia. S. C.

"The Surgical Treatment of Gonorrheal Epididymitis"—By Dr. H. W. McKay, Charlotte, N. C.

"Tuberculosis of the Kidney"—By Dr. Robt. C. Bryan, Richmond, Va.

"Some Cases of Renal Infection" (Lantern slides)—By Dr. N. Bruce Edgerton, Columbia, S. C.

"Focal Infection of the Urinary Tract"—By Dr. Lawrence T. Price, Richmond, Va.

"Primary Closure of the Ureter and Renal Pelvis When Operating for Stones"—By Dr. LeGrand Guerry, Columbia, S. C.

"A Lantern Slide Demonstration of Removal of Ureteral Calculi by Cystoscopic Method"—By Dr. A. J. Crowell, Charlotte, N. C.

"On the Recognition and Treatment of Bright's Disease"—By Dr. W. D. MacNider, Chapel Hill, N. C.

Group 3—Mental and Nervous.

(a) Nervous.

"Chronic Brain Injuries and Allied Conditions"—By Dr. William Sharpe, New York, N. Y. (Invited Guest).

"Observations Drawn from Operations on the Head and the Spine" (Lantern slides)—By Dr. Addison G. Brenizer, Charlotte, N. C .

"Cerebro-Spinal Meningitis—with Report of Case"—By Dr. Lester E. Hockette, Charlotte, N. C.

"Neurology and Mental Hygiene as Factors in Public Health"—By Dr. Tom A. Williams, Washington, D. C.

"Some Observations on Tumor of the Brain"—By Dr. C. C. Coleman, Richmond, Va.

(b) Mental.

"The Present Scope and Limitations of Roentgen-Ray Examination of the Head"—By Dr. A. L. Gray, Richmond, Va.

"The Relation of Good Health to Good Citizenship"—By Dr. E. S. Waring, Daytona, Florida.

"The Psychopathology and the Treatment of Morphinism"—By Dr. Wm. Ray Griffin, Asheville, N. C.

"Treatment of the Epileptic Insane"—By Dr. Victor R. Small, Raleigh, N. C.

"Some Ideas Suggestive of the Care of Mental Defectives"—By Dr. C. Banks McNairy, Kinston, N. C.

"Some Considerations on Hospital Management"—By Dr. Albert Anderson, Raleigh, N. C.

"Some Suggestions Which Psychology Has to Offer to the Understanding of Chronic Diseases"—By Dr. W. A. White, Washington, D. C. (Invited Guest.)

4:00 to 5:00 P. M.—Entertainment at Cedar Springs.

8:00 P. M.—Evening Session.

Group 4—Therapeutic.

(a) Radium and Roentgen-Ray Therapy.

"Intensive Roentgen-Ray Therapy in Inoperable and Borderline Malignancy"—By Dr. Fred M. Hodges, Richmond, Va.

"Radium Therapy in Benign and Malignant Conditions"—By Dr. Samuel Orr Black, Spartanburg, S. C.

"Treatment of Inoperable Carcinoma of the Uterus with Radium"—By Dr. S. W. Budd, Richmond, Va.

(b) Chemical and Other Therapy.

"Blood Transfusion by the Sodium Citrate Method"—By Dr. S. S. Gale, Roanoke, Va.

"The Present Status of Antisepsis"—By Dr. Southgate Leigh, Norfolk. Va.

"The Moral Obligation of the Medical Profession to Humanity"—By Dr. Edwin M. Mann, Kenbridge, Va.

"Rest and Movement in Tuberculosis"—By Dr. B. O. Edwards, Asheville, N. C.

"Specific Prophylactic Immunization Against Tuberculosis"—By Dr. Roswell E. Flack, Asheville, N. C.

"The Effect of the National Prohibition on the Inebriates of Our Country"—By Dr. W. C. Ashworth, Glenwood, N. C.

"A Plea for a Systematized Tri-State Professional Fight Against Infant Mortality This Summer"—By Dr. Wm. P. Cornell, Columbia, S. C.

"Simplicity in Infant Feeding"—By Dr. McGuire Newton, Richmond, Va.

"Post-Operative Dietotherapy"—By Dr. Warren T .Vaughan and Nellie H. VanDyke, B. S., Richmond, Va.

10:30 P. M.—Smoker at Dr. Black's.

THURSDAY, FEBRUARY 17, 9:30 A. M.

Morning Session.

Group —Endocrinologic.

"Cytotoxins and Anticytotoxins with Regard to the Endocrine System"—By Dr. K. D. Graves, Roanoke, Va.

"The Effect of Pituitrin on the Rate of Urine Flow in the Human Being"—By Dr. R. A. McBrayer, Sanatorium, N. C.

"Some Clinical and Experimental Observations Upon the Dangers of Pituitrin"—By Drs. Chas. C. Haskell and M. Pierce Rucker, Richmond, Va.

"Migrainous and Pituitary Headaches Contrasted"—By Dr. J. Allison Hodges, Richmond, Va.

"Some Hypopituitary States"—By Dr. Beverly R. Tucker, Richmond, Va.

Group 6—Orthopedic and Reconstructive.

"Foot Strains"—By Dr. Alonzo Myers, Charlotte, N. C.

"Plastic Surgery" (Lantern slides)—By Dr. T. C. Bost, Charlotte, N. C.

"Charcot Joints" (Lantern slides)—By Dr. Thos. W. Murrell, Richmond, Va.

"Foreign Bodies in the Knee Joint"—By Dr. William Tate Graham. Richmond, Va.

"The Significance of Tender Points and Limitations of Motion in Shoulder Joint Injuries" (Lantern slides)—By Dr. H. Page Mauck, Richmond, Va.

"A Lantern Slide Demonstration of Bone Graft Operation Using Bone Strips and Bone Shavings"—By Dr. Michael Hoke, Atlanta, Ga.

1:00 P. M.—Luncheon.

2:30 P. M.—Afternoon Session.

Group 7—Cardio-Vascular.

"Diseases of the Superior Mediastinum with Case Report"—By Dr. Garnett Nelson, Richmond, Va.

"Symptoms of Heart Failure"—By Dr. M. C. Palmer, Spartanburg, S. C.

"Cardinal Principles in Cardiological Diagno-

sis"—By Dr. William B. Porter, Richmond, Va.

"Electrocardiographic Studies in Diagnosis"—By Dr. Douglas VanderHoof, Richmond, Va.

"On the Treatment of Patients Manifesting High Blood Pressure"—By Dr. Lewellys F. Barker, Baltimore, Md. (Invited Guest)

Group 8—Gynaecologic.

"Chronic Leukorrhea Due to Cervicitis"—By Dr. A. E. Baker, Charleston, S. C.

"Associated Nervous Manifestations and Psychoses in Obstetrics"—By Dr. Joseph Bear. Richmond, Va.

"Etiology and Treatment of Retroversion of the Uterus" (Lantern slides)—By Dr. Stuart Michaux, Richmond, Va.

"The Hygiene of Pregnancy"—By Dr. Greer Baughman, Richmond, Va.

"Pain as an Early Symptom of Separation of the Placenta in Last Months of Pregnancy. Report of Four Cases"—By Dr. I. P. Battle, Rocky Mount, N. C.

Group 9—Eye, Ear, Nose and Throat.

"Ocular Causes of Fatigue"—By Dr. Emory Hill, Richmond, Va.

"Some Thoughts About Prevention of Blindness"—By Dr. Jos. A. White, Richmond, Va.

"The Relation of the Eyes to Systemic Diseases"—By Dr. Ben Witt Key, New York, N. Y. (Invited Guest.)

"A Case of Penetrating Wound of the Eye"—By Dr. H. S. Hedges, Charlottesville, Va.

"The Eye Findings of Early Pituitary Disease"—By Dr. Henry L. Sloan, Charlotte, N. C.

"Some Unusual Bronchoscopic Cases"—By Dr. E. W. Carpenter, Greenville, S. C.

Information.

The Hotel Cleveland will be official headquarters of the Association. All meetings will be held in the auditorium of the hotel.

The following is a list of hotels in Spartanburg with rates:

Hotel Cleveland—European plan only—One person, $2.50 to $3.00; two persons, $4.00 to $5.00.

Finch Hotel—European plan—$1.50 and upward. American plan, $4.50.

Gresham Hotel—European plan only—$1.50 and $2.00.

Immediate steps should be taken to secure a room in one of the above hotels. Many physicians will be at the meeting. Delay in providing for your accommodation may cause you discomfort. Act now!

Entertainments.

The serious purpose of the Association and of each meeting is to make of every member a better doctor. But, a little relaxation and a little diversion is part of the game of life. Consequently, the local Committee of Arrangements is not going to allow you to become exhausted by over-work while you are in Spartanburg. Your entertainment has been provided for.

From 4:00 to 5:00 o'clock on Wednesday afternoon, February 16th, the members of the Association will be given a delightful automobile drive out to Cedar Springs, a distance of four miles, where an entertainment will be given by the South Carolina School for the Deaf and Blind, under the superintendency of Dr. Newton F. Walker. This hour will be filled with instruction and pleasure. On the evening of Wednesday, February 16th, from 10:30 to 12:00, Dr. H. R. Black will give a buffet luncheon and smoker at his home on East Main street.

Bring your wife to the Spartanburg meeting. The committee for the entertainment of the ladies will make her sojourn pleasant. Spartanburg is one of the great centers in the South for the education of women. Perhaps your wife was educated in Spartanburg. Bring her with you!

Papers relating to the same or to closely allied subjects have been arranged in groups on the program. The discussion of the group-subject and of the individual papers will be deferred until the reading of the group has been completed. It is suggested that authors of titles of papers in a group confer together and select some one to initiate the group-discussion. Send a copy of your paper to one of your fellow-physicians, and ask him to prepare to discuss it. Let the discussion be snappy and wide-awake. These discussions ought to be of great interest and helpfulness.

Kindly notify the secretary at once of any error in the program, or of any omission from it. The program is complete. No titles, unless they be omissions, will be added to it.

The Association has never presented a program of wider scope or of better quality. If you do not attend this meeting you will live for the remainder of your days in close companionship with regret.

Come to the Spartanburg meeting. Bring your medical neighbor. Whether he be a member of the Association or not, he will be gladly welcomed to the meeting and to the entertainments.

If your discussion is to be illustrated do not worry about the lantern or the operator. The Committee of Arrangements are attending to this matter.

Section 9: "Not more than twenty minutes will be occupied in reading any paper, except by a vote of the Association. In the discussion of papers, resolutions or questions, no member shall speak longer than five minutes nor more than twice on the same subject, except on special permission by a vote of the Association."

The officers of the Association—all of them—and the Committee on Arrangements, are your servants. Command them.

Please arrange to be at the Hotel Cleveland in Spartanburg not later than 8 o'clock on the morning of Wednesday, February 16th. The opening exercises will begin exactly at 10 o'clock, and they will be characterized by brevity and other virtues. Hear them. Arrange not to leave Spartanburg before midnight of Thursday, February 17th.

There will be ample time for the reading and the discussion of each group of papers.

For additional information of any kind whatsoever write to or telegraph any member of the Committee of Arrangements in Spartanburg, or

J. P. MUNROE, M. D., President,
Charlotte, N. C.

JAS. K. HALL, M. D., Sec'y-Treas,
Richmond, Va.

News Items

New Hanover County — Dr. J. S. Cranmer in his inaugural address at January meeting of the Society in Wilmington said in part:

"In the beginning of my term of office as president of this society and along with the beginning of this new year, already confronted with its manifold problems, in some of which we, too, must take a hand it has occurred to me that it would be a good plan for us to take stock, muster our forces, and present an united front to the future, for "In unity there is strength" and "In multitude of counsel there is safety." We must all work together to make our profession in every way worthy of the trust and confidence reposed in us, ever raising our standard and making of ourselves better doctors and better men.

"Wilmington should be the medical center of North Carolina, but it is perfectly clear to me, as I am sure it is to all of us, that we have not as yet attained this position, nor will we ever reach it unless we work together for this common end. We all know that our hospital facilities have been found wanting. We should not rest until we have in Wilmington several hospitals meeting every requirement of the American Medical Association and the American College of Surgeons, standing as beacon lights to the whole state, inviting and meriting their patronage and co-operation.

"There is so much good in the worst of us and so much bad in the best, that it ill behooves any of us to talk about the rest. 'This doggerel contains more truth than poetry, and from it I propose for our new year's slogan, that we have more praise in the profession for the profession, making each man's success a source of pride and gratification to us all. Let us not wait to break our alabaster boxes, but give now the square deal and fair word that will make living more worth while, following always the 'Golden Rule'—the divine law governing human relationships—accepted by all religions and proclaimed by all prophets and teachers of every creed.

"We are physicians from choice. We are also physicians because we felt the call, the sacrifices and the hardships as well as compensations, were all known to us by the experience of countless numbers who have gone on before. We must not, in this materialistic age, allow the spirit of commercialism to creep in, nor ourselves to become mercenary.

"This profession of ours has come down to us full of honor and good deeds. It must be our duty and pleasure to perpetuate them and add to their lustre. The joy of healing the lame, the sick and the halt has been ours, by the grace of God, for generations. There is no profession that has greater good will, reverence and respect, than ours. 'Honor a physician according to thy need of him, with the honors due him. For verily the Lord hath created him. For, from the Most High cometh healing.' Ecclesiasticus, 38th chapter, 1st verse. Apocrypha.

"We are living in the best town in the State. We are also living in the best State in the Union, and the Union is the biggest thing in the world. We must keep apace with the times. The fact that we are doctors should not keep us from the narrow professional path and see the flowers by the wayside. We must aid and abet, by our influence and support, the movements on foot to bring into our midst more opportunities for enjoying good literature and art, good plays and music. Even a good wrestling match, a hunting or fishing trip, or an hour in the gym, will prove of greater benefit at times than an evening spent in the office. In all this we will go far toward making our lives complete and satisfactory not only to ourselves and our families, but to our community. I, myself, am approaching middle life and am reaching the golden age, but I am still 'dreaming dreams.' I am also 'seeing visions' and the greatest of them all is the one in which I see this society, as a whole and as individuals, marching ever onward and upward toward the fulfillment of our destiny. And, in the language of Woodrow Wilson, 'God helping us, we can do no other.'"

The Bertie County Medical Society met in regular session Thursday, January 8, at Windsor.

The new officers for the year 1921 were elected as follows: President, S. A. Saunders, Aulander; secretary and treasurer, F. H. Garriss, Lewiston; and

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If Patient suffers from THE BLUES (Nerve Exhaustion), Nervous Insomnia, Nervous Headache, Irritability or General Nervousness, give four times a day one teaspoonful NEURILLA
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It's simple. Most big things usually are.

Send for this book today, Doctor. Of invaluable assistance to every man who wants to give his patients the benefit of the best treatment in the world.

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REILLY & LEE - - Chicago

delegates to state convention, W. L. Evans of Windsor, with F. H. Garriss as alternate.

A set of resolutions were passed endorsing the splendid work done in our county during the past year by our health officer, Dr. Hugo Muench.

After the completion of the business meeting Dr. H. W. Lyon of Windsor read a very interesting paper on "Pneumonia and the Present Day Treatment of Same." The paper was discussed by Drs. Jenkins, Benthall and Norfleet. Dr. Evans will prepare a paper on "The Treatment of Infantile Dysenterries" for the next meeting.

The Fifth District Medical Society met in Sanford, December 16, 1920, in the Sanford Commercial Club Building. The scientific meeting was held in the morning from 11 to 2 o'clock. At this meeting some excellent papers were

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read and discussed. Following this the meeting adjourned for a luncheon, which was given us in the Commercial Club Room by the Sanford doctors.

Following the luncheon there was a business session and report of interesting cases by several of the doctors present.

It was decided the next meeting of the society would be held at the North Carolina Sanatorium in August.

J. D. Highsmith, Sec.

Scotland County Medical Society met in Gibson January 3rd. For the ensuing year the following officers were elected:

President—Dr. N. C. Hunter, Laurinburg, N. C.

Vice-President—Dr. J. S. Gibson, Gibson, N. C.

Secretary—Dr. F. P. James, Laurinburg, N. C.

Delegate to the N. C. Society—Dr. Peter John, Laurinburg, N. C.

Doctors present were Drs. J. G. Pate, E. A. Livingston and J. S. Gibson of Gibson; Drs. N. C. Hunter, F. P. James, Peter John, Peter McLean of Laurinburg and Drs. Wilcox, of Laurel Hill, and W. G. Shaw, of Wagram.

After the business meeting Dr. E. A. Livingston, retiring president, entertained the Society at a banquet at Hotel Gibson.

Polk County Officers.

At the first regular meeting of the Henderson-Polk County Medical Society for the year 1921 the following officers were elected: Drs. Guy E. Dixon, President; W. B. W. Howe, V-President, and R. C. Sample, Secretary and Treasurer, all of Hendersonville. Dr. Guy E. Dixon was elected as delegate to the State Society meeting and Dr. J. S. Brown, alternate.

R. C. Sample,Sec'y.

No Time to Read?

The man who says he hasn't time to read really confesses that he doesn't want to read. Any of us can find time for anything we really want to do.

To offer extreme buyness as an excuse for not reading is silly.

I do not care what your job is, you can't possibly have as many things to hold your attention and make demands upon your time and energy as Theodore Roosevelt had his first two years in the White House.

Look at what he read during that time. The list is taken from one of his own letters:

"Parts of Herodotus, the first and seventh books of Thucydides, all of Polyhius, a little of Plutarch, . . . some of Macaulay's Essays, three or four volumes of Gibbon ,three or four chapters of Motley, the 'Life of Prince Eugene,' of Admiral de Ruyter, of Turenne, and of Sobieski (all in French), . . . 'Macbeth,' 'Twelfth Night,' 'Henry IV,' 'Henry V,' 'Richard II,' the first two cantos of 'Paradise Lost,' some of Michael Drayton's poems—there are only three or four I care for, portions of 'Nibeleungenlied,' portions of Carlyle's translation of Dante's 'Inferno,' Church's 'Beowulf,' . . . Cooper's 'Pilot,' some of the earlier stories and some of the poems of Bret Harte, . . . an occasional half hour's reading in Keats, Browning, Poe, Tennyson, Longfellow, Kipling, Bliss, Carman, also in Poe's 'Tales' and Lowell's 'Essays,' some of Stevenson's stories, and of Allingham's 'British Ballads,' and Wagner's 'Simple Life.' "

Foot Drop Following Laparotomy.

J. W. Duncan, Omaha (Journal A. M. A., Jan. 1, 1921), has observed two cases of paralysis of the anterior tibial group of muscles with complete foot drop immediately following laparotomy in which the Trendelenburg position was employed. Both resulted in early and complete recovery.

Gauze Sponge in Abdominal Cavity for Fourteen Years.

In the case, cited by Fred C. Watson and P. H. Desnoes, Bocas del Toro, Panama (Journal A. M. A., Jan. 1, 1921), the symptoms and signs of an early ectopic gestation were closely simulated by a gauze sponge that had been in the abdominal cavity for fourteen years, following an operation for chronic appendicitis. No symptoms other than constipation could be attributed to the presence of the gauze sponge prior to the onset of the illness reported. The gauze sponge had become completely encapsulated.

In Medical Circles

it has gradually but surely become an established belief that quality is a fundamental asset, that it pays — and pays well — to use the best. In other words, that the time and effort employed in specifically ordering a product that has been shown to be the most effective and dependable of its class — and in making sure that it is the one dispensed by the druggist and actually used by the patient — is time and effort well spent.

No product better exemplifies the foregoing than Dioxogen. As the best known and most widely used peroxide of hydrogen,

Dioxogen

holds the place it does to-day in the regard of medical men, by sheer force of merit—and the following advantages—

In purity and oxygen-liberating power, Dioxogen exceeds U.S. Phar. standards for H_2O_2 by 25%.

Dioxogen is odorless, almost tasteless, and entirely free from acids and acetanilid. It is also colorless and does not stain the skin.

Absolutely non-poisonous and non-irritating, Dioxogen is not only the most potent, but the safest and most harmless of antiseptics.

Applied to wounds, Dioxogen promptly destroys all bacteria, and stimulates the reparative processes of the tissues.

Dioxogen is the one powerful germicide at the physician's command that can be freely used anywhere and anytime without the slightest danger.

With Dioxogen possessing the qualifications it does, and assuring its users a degree of safety, efficiency and freedom from objectionable effect that no other equally potent germicide can, is it any wonder that it has become the standard antiseptic in the home, the school, the office and the factory?

THE OAKLAND CHEMICAL CO.

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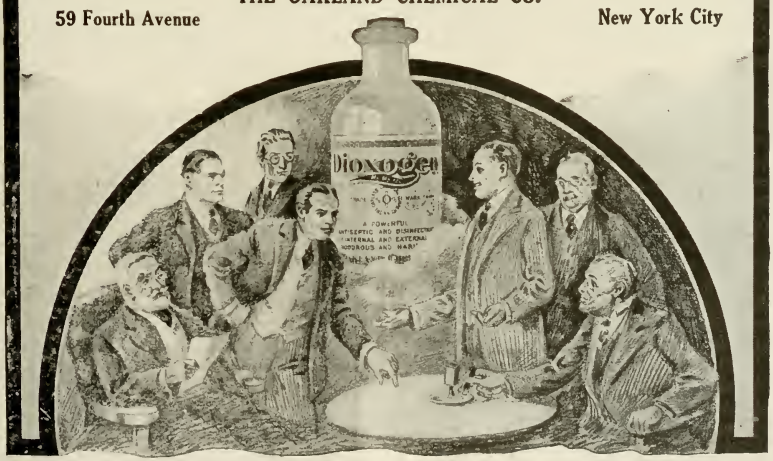

U. S. Public Health Service Studies New Jersey Foundries.

Washington. — The comprehensive study of the health conditions prevailing in the brass and iron foundries of New Jersey and New York, which was begun six months ago by the U. S. Public Health Service, is drawing to a close, with results that are said to be extremely interesting and valuable.

"The Commissioner of Labor of New Jersey," says Surgeon General Cumming, of the Public Health Service, "realizing the need for scientific information on health hazards in the foundry trades, asked the Service men some months ago to send specialists to study the trade processes and working conditions obtaining in the brass and iron foundries so that it might advise him wisely in regard to any regulations governing these hazards that might be proposed. His request was seconded by the plant managers, who co-operated enthusiastically in the study.

"In the foundries, as in other branches of industry, the health of the workers is of course of the first importance, from both a humane and a business point of view. Ill health causes sickness, absenteeism, accidents and loss of trained men, all of which result in decreased efficiency and reduced output for the plant, causing physical and economic losses to both men and owners.

"The Service gladly accepted the invitation and sent industrial engineers to analyze the plant processes and working conditions and industrial physicians to make physical examinations of the men, thus ascertaining whether working conditions existed that might be expected to react adversely on the health of the workmen and also what physical defects or ailments were actually afflicting the men. Knowledge of these data were of course essential as a basis for an attempt to evaluate the actual occupational heat hazards.

"The chief hazards of foundry work are those associated with production processes, that is of high heat temperatures, which are essential in parts of the plants; of smoke, gas and fumes, which are evolved in sundry phases of the work; and of dust, liable to be noxious, which is produced abundantly in the sandblast, tumbling, and grinding rooms, where castings are reduced to final form.

"To these hazards are added those due to poor plant architecture, inadequate or unsanitary personal service and unhygienic conditions resulting from inadequate lighting and lack of attention to cleanliness in workrooms, windows, globes, and similar essentials.

"All of these hazards were studied closely and tentative protective regulations were devised. Chief attention, however, was given to the fumes and the dust, which were believed to be the factors most likely to cause trouble. The investigation made of the sandblast process and its effect was probably the most complete ever made.

"All the data have not yet been assembled; but tentative conclusions indicate that industrial hygiene can no longer be considered merely as a matter of sanitation but must be widened to include fundamental factors associated with plant processes and the materials used therein. A flattering result of the work has been the cheerful reception by the plants of the recommendations of the Service in regard to the eliminating of the hazards found."

Chronic Catarrhal Diseases.

Chronic catarrh never fails to indicate general constitutional debility. Local treatment is always desirable but for permanent results efforts must be directed toward promoting general functional activity throughout the body, and a general increase of systemic vitality. The notable capacity of Gray's Glycerin Tonic Comp. in this direction readily accounts for the gratifying results that can be accomplished through its use in the treatment of all chronic catarrhal affections, but especially those of the gastro-intestinal canal and respiratory tract. The particularly gratifying features in the results accomplished by Gray's Glycerine Tonic Comp. are their substantial and permanent character. This is naturally to be expected since they are brought about through restoring the physiologic balance of the whole organism.

The next annual meeting of the North Carolina Medical Society will be held at Pinehurst, N. C., April 26-27-28. The Health Officers' meeting will be April 25.

Remember

What

Gray's Glycerine Tonic Comp.

accomplished during the past two years in the treatment of influenza. Many physicians, by its judicious use, fortified their patients against the dangers of this dreaded disease. How widespread and serious will it prove this year? Gray's Glycerine Tonic Comp., will no doubt be indicated and physicians may count on obtaining the desired results from its use.

A tonic of known dependability that can be prescribed at any season of the year.

THE PURDUE FREDERICK CO.

135 Christopher Street New York City

FOR SALE

Full set of Instruments and Office Equipment of the late Dr. R. J. Teague, Eye. Ear, Nose, and Throat Specialist. The death of Dr. Teague leaves an excellent opening here for someone doing this class of work Address Mrs. R. J. Teague, Roxboro, N. C.

Mechanical Role of the Appendix.

Dufour presents some evidence that stimulating the outside of an intestine or the peritoneum close to it is the most effectual means for starting peristalsis in it. When the appendix fills with feces and straightens out, its free end mechanically irritates the peritoneum and thus sets up peristalsis in the bowel in the region. An adherent or obliterated appendix is of no functional use in this respect, and hence its removal can be only an advantage. But the normal appendix should not be removed unnecessarily, he declares.

NOTICE

Sherman's Vaccines

10 Mil. c. c.

Twenty Preparations. Beyond the experimental stage.

Millions of doses have been administered.

ARE NOW SUPPLIED IN A NEW 10 MIL. (C. C.) CONTAINER

This package has many superior features which assure asepsis, prevent leakage and facilitate the removal of contents. It is constructed on the well known Sherman principle.

The vial is amply strong which prevents breakage so frequent with shell vials.

We are exclusive and pioneer producers of Bacterial Vaccines, Originators of the asceptic bulk package. Pioneer in elucidation, experimentation and clinical demonstration.

The largest producers of Stock and Autogenous Bacterial Vaccines.

Manufacturer of BACTERIAL VACCINES

G. H. SHERMAN, M. D.

Detroit, Mich. U. S. A.

"Sherman's Vaccines are dependable Antigens"

Case of Borax Poisoning.

In the case cited by Caryl Potter, St. Joseph, Mo. (Journal A. M. A., Feb. 5, 1921), the patient took what he thought was a saline cathartic. Within fifteen minutes he was seized with violent epigastric cramps, accompanied by attacks of retching and vomiting, coming on at from five to ten minute intervals. At five minute intervals he would cry out that he was strangling or choking. The lips were slightly cyanotic. At intervals of a few minutes, he cried out with pain in the epigastrium and then immediately after he would grasp his throat and complain of difficulty in swallowing, of choking and strangling. Notwithstanding active, hypodermic stimulation (1-20 grain of strychnin and 2 c.c. of camphor in oil), he died in one of these paroxysms soon afterward. There was no lead line on the gums or other symptoms present or past to suggest lead colic. Chemical analysis of the contents of the stomach demonstrated the presence of 1½ ounces of borax. At the coroner's inquest it was shown that the deceased's mother-in-law, about 80 years of age, had filled the empty saline bottle with borax without informing the family or changing the label, and that it had been placed on the medicine shelf by another member of the family who thought it was a bottle of saline laxative.

Health Almanacs.

Louisiana and Rhode Island have issued health almanacs for 1921. That of Rhode Island is published as a number of its regular bulletin, thus securing second-class postal rates. The Louisiana almanac is a separate publication. In the preparation of these booklets the compilers have shown ingenuity, an excellent sense of humor, and a sense of public taste. Common sense and excellent medical advice are mixed carefully with humor, poetry and pictures, making a combination that will appeal to every citizen. The climatological and other almanac data make the pamphlets of practical value throughout the year. It is easy to give advice but hard to make people take it: when the pills are as well sugar-coated as in these almanacs, the patients "cry for them."—Jour. A. M. A., Feb. 19, 1921.

Medical Use of Whiskey.

Things are not always what they seem, says the poet. And in the world of practical affairs, general statements, even oft repeated and popularly accepted, do not always check up with the facts. Much has been made of the claim that the adoption of federal prohibition has seriously interfered with the use of whiskey for medicinal purposes by physicians. The Anti-Saloon League of Delaware, in a recently issued circular, presents an interesting table on this question, based on information furnished by federal and state officials and statistics taken from the American Medical Directory. According to this tabulation, there were, at the time the federal prohibition amendment was adopted, twenty-four states—one-half of the entire number—whose laws forbade either the writing or the filling of prescriptions for whiskey or brandy. In these states, naturally, no permit under the federal law could be issued to physicians. In the remaining twenty-four states, in which there is no such law and in which, under the Volstead act, permits to prescribe whiskey may be issued to physicians, there are, according to the American Medical Directory, 112,238 practicing physicians. Yet in these twenty-four states, only 33,379 physicians—29 per cent—have taken out permits. Evidently, the remaining 71 per cent do not regard whiskey as of enough value in the practice of medicine to go to the trouble of taking out a permit.—Journal A. M. A., Feb. 19, 1921.

County Health Officers.

Dr. John V. Hunter has been elected physician and quarantine officer of Randolph County. Dr. John C. Twitty has been re-elected county physician and quarantine officer of Rutherford County. Dr. Grover Wilkes has been appointed physician of Jackson County. Dr. S. L. Russell has been appointed health officer of Yadkin County. Dr. R. S .Bailey has been appointed health officer of Vance County.

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The Health Officers' meeting will be April 25.

Bronchial Affections

Quinsy---Pharyngitis---Laryngitis
Influenza

are usually more prevalent during the "breaking up" season, following the Winter months.

Antiphlogistine
TRADE MARK

applied thick and hot over the throat and upper air passages, not only gives almost instant comfort to the patient but begins promptly to reduce and relieve the inflammatory process in the larynx and bronchi.

Send for "The Pneumonic Lung" booklet

THE DENVER CHEMICAL MFG. CO. NEW YORK

LABORATORIES: SYDNEY MONTREAL LONDON PARIS

THE NEWEST PROBATIONER.

(By Gene Harrison, R.N., Barnes Hospital, St. Louis, Mo., in The Modern Hospital, February, 1921.)

The newest probationer had been summoned to the office of the superintendent of the training school. Slowly she went down the corridor, her mind in a tumult of doubt and fear.

"What have I done? Or not done?" she asked herself.

But once at the door of the office Nora gave her brown, unruly locks a toss, her Irish blue eyes snapped, and she walked briskly up to the desk.

"You don' tneed to send me home," she burst out as Miss Marvel looked up.

"You don't need to send me home," I'm going anyway."

Miss Marvel looked at the girl with eyes as calm as a mid-summer morning.

"Why are you going home, Miss Bryan? Sit down and tell me about it."

As soon had Nora expected the floor to open up and swallow her as for Miss Marvel to ask her to sit down and tell her side of the case. But she plumped down into the proffered chair and began.

"I'm tired of being the newest probationer, I'm tired of dusting and making beds—and making beds and dusting. I've served trays till I hear them clank together in my dreams. They won't let me do anything interesting, no matter how well I could do it. I got a better grade in materia medica than Miss Music, but they won't let me give medicines because I'm only a probationer. I can spell better than the head nurse, but they won't let me write an order for a doctor because I'm only a probationer. I could do these charts beautifully. Why, I'm considered an artist at home. The senior nurse messes the charts terribly, but they won't let me touch them because I'm only a probationer—and I won't be it any longer. I'm going home. You don't need to send me. I'm going tonight."

Nora drew a long, sobbing breath. Would Miss Marvel call a committee to devise punishment for one so bold and rash? Would she even, maybe, have her arrested?

But Miss Marvel's face was non-committal. "We will speak about the going home a little later, Miss Bryan. Just now would you be kind enough to take a little note down to Miss Parks in the dispensary, and wait for an answer?"

Miss Marvel hastily wrote a few words on a bit of paper, and almost before she realized what had happened the newest probationer found herself waiting for Miss Parks' note.

The nurse had seated her in a little alcove where she could see plainly the teeming multitude waiting anxiously, fearfully, each for his turn in the clinic. Near one door were the halt and lame, those with twisted bones and gnarled and aching joints. Some were old and gray, others, babes in their mothers' arms, all wrecks by the wayside.

By another door were men and women and children bearing on their faces and hands, perhaps, lesions marking the unholiness of the lives they lived. Here in still another group were those like unto the heathen gods, who, having eyes, see not. Old men were there, and women, too, whose besotted lives had brought this horrible punishment. Little children were there, wee innocents who, according to all fitness, had no right to be born.

Nearest to Nora was a group comprised largely of children with pinched, hungry little faces and pleading eyes. Some showed marks of pain, others of hunger, for better understanding. "He ain't sick," she heard one mother say, 'He ain't sick, but he can't learn at school." Since it don't cost much, I'll have it done. But I be dummed if I see how lumps in his neck keeps his brains from workin'."

Eagerly Nora watched the faces as each in turn was summoned by a loud voice into a clinic. Often, as the afflicted one came out, a look of dull despair was replaced by a gleam of hope. Others crept out more worn and haggard still, the last ray of hope crushed and gone.

"Miss Bryan."

Nora started as if from a dream. She took the note handed her by the smiling Miss Parks and staggered blindly up the steps. Once in the open air she drew a long breath, squared her shoulders and rushed pell-mell back to Miss Marvel, little realizing she had spent two hours in the clinic.

"Here's your note—and you can't send me home. I won't go. If you try, I'll—I'll come back under another name."

NEURILLA FOR NERVE DISORDERS NEURILLA
If Patient suffers from THE BLUES (Nerve Exhaustion), Nervous Insomnia, Nervous Headache, Irritability or General Nervousness, give four times a day one teaspoonful NEURILLA
In nervous fretfulness of teething Children give five to twenty drops.
DAD CHEMICAL COMPANY, NEW YORK and PARIS.

Iodinized Emulsion (SCOTT)
THE IDEAL INTESTINAL ANTISEPTIC.
Indicated in Typhoid and other slow fevers, Dysentery, Chronic Diarrhœa and gastro-intestinal troubles.

Creosotonic (SCOTT)
THE IDEAL SYSTEMIC ANTISEPTIC.
Invaluable in Tuberculosis, Bronchitis, Pneumonia, Asthma, Catarrh and as a tonic after all exhausting diseases.

Samples and Literature free on request.
The Dawson Pharmacal Company, Incorporated. Dawson Springs, Kentucky.

Miss Marvel's kindly eyes twinkled. "Why this change of heart? Sit down and tell me about it."

For the second time that day Nora found herself seated in the presence of one whom malicious or mischievous upper classmen had taught her to fear. Her words tumbled over one another in their eagerness.

"I was so blue—and tired—and homesick when you sent me down there. I hated dusting and beds and trays. But I saw—I saw—Miss Marvel, you know the kind of things I saw. I wanted to take all those little ones into my arms and mother them. I wanted to know things and do things, and I couldn't be blue now, or discouraged, for I am so thankful I am I, and not lame or blind, or stuffed up so I can't breathe, or—or —you know, Miss Marvel."

"So you think you will stay with us?"

"Yes, oh yes. I'll scrub floors or anything if you will only teach me how to make humanity better and happier."

Miss Marvel smiled. "Scrubbing floods is out of a nurse's province. And we can only hope to help in making humanity better and happier. The instinct of a true nurse has come to you today."

Miss Marvel rose. Nora stumbled to her feet. The superintendent opened the top drawer of her desk, and before the girl realized what had happened a bit of fair white linen was pinned over her unruly locks, which curled in defiance of long smoothing every morning. The older woman took Nora's hand in both her own.

"I welcome you into our training school. And may God bless you, my dear, in all you do."

Nora, no longer a probationer, rushed to her room to write her mother. Miss Marvel unfolded the neglected note, and smiled as she read: "I believe it worked."

When Iodine Is Indicated
use
Burnham's Soluble Iodine

and thus assure the results you seek.
B. S. I. can be used in adequate dosage, over long periods, without gastric disturbance, or other disagreeable effect.
A preparation that offers remarkable possibilities in the treatment of many intractable diseases. If you have some case that bothers you, our medical adviser will be glad to outline what you may accomplish with B. S. I.
Burnham Soluble Iodine Co.
Auburndale, Mass.

PRESBYTERIAN HOSPITAL

CHARLOTTE, N. C.

Front View, Main Bui

Situated in twelve-acre grove of great beauty. The best of operating rooms (four). Well equipped X-Ray and bacteriological laboratories. Full corps of nurses. Private rooms, with and without baths. Seclusive Obstetrical Department. Open to all physicians.

SOUTHERN RAILWAY SYSTEM

Improved Schedule to Norfolk, Va.

Effective Sunday, January 30th

Pre-War Service Restored

Through Drawingroom Sleeping Car Charlotte to Norfolk

Lv. Charlotte, Train No. 12	6:30 P. M.
Lv. Salisbury, Train No. 12	8:25 P. M.
Lv. High Point, Train No. 12	9:40 P. M.
Lv. Greensboro, Train No. 12	10:35 P. M.
Lv. Danville, Va., Train No. 12	12:40 A. M.
Ar. Norfolk, Va., Train No. 12	9:00 A. M.
NEW TRAIN NO. 5. Lv. Danville	4:10 P. M.
(Ex. Sun) Ar. Lawrenceville, Va	10:10 P. M.

Connecting with Train No. 36.

Train No. 2, local day train to Norfolk, will continue to leave Danville 7:20 A. M.

For Fares and Reservations, Apply

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POND'S EXTRACT

For arresting epistaxis or nose bleed, especially the capillary oozing that occurs so often during and after colds and influenza, Pond's Extract is very effective, applied full strength as a spray or preferably on gauze or cotton pledgets. It is a safe and dependable means of relieving the bleeding that accompanies any congestive condition of the nasal structures.

POND'S EXTRACT CO., New York and London

Nasal Bleeding

Vapo-Cresolene

For Forty Years
Vaporized Cresolene
has held its position as a valuable remedy for certain bronchial diseases of childhood.

It is particularly useful in the treatment of the very young.

Cresolene is indicated in Whooping Cough, Spasmodic Croup, Bronchitis, Asthma, Broncho-pneumonia, Coughs and the bronchial complications incident to Scarlet Fever and Measles.

Vaporized Cresolene is destructive to Diphtheria bacilli and may be advantageously used in connection with the treatment of this disease.

Let us send you our descriptive and test booklet which gives liberal sample offer.

THE VAPO-CRESOLENE CO., 62 Cortlandt Street, NEW YORK, Leeming-Miles Building, Montreal, Canada

Uro-Phosphate Compound

Urotropin	gr. vii ss
Sodium Acid Phosphate	gr. x
M. ft. Tablet	No. 1

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The Health Officers' meeting will be April 25.

Sal Hepatica

THE STANDARD SALINE LAXATIVE

Samples on request

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New York

The Achilleion palace at Corfu, formerly a possession of the ex-Emperor of Germany, has been converted into a hospital by the French and named the Tribondeau Hospital, in memory of a naval medical officer and bacteriologist who died of influenza in the epidemic of September, 1918.

GWATHMEY APPARATUS

for Gas-Oxygen and Ether Vapor Anesthesia

known as
the most practical'
the simplest
and the most economical,
the one which does not get out of order.
which has no mystery about it
and which is never discarded.

TOWNSEND INHALER

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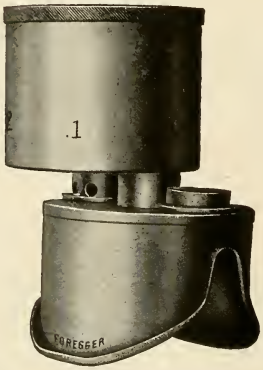

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Open ready for use.

Practical, safe, economical and always ready. Used equally well with either Chloroform or Ether. No physician or obstetrician is ready for emergencies without a Townsend Inhaler always at hand.

MADE BY THE FOREGGER COMPANY, 47 WEST 42ND. STREET, NEW YORK.
Manufacturers of Anesthesia Apparatus Exclusively.
SOLD BY THE WINCHESTER SURGICAL SUPPLY CO., CHARLOTTE, N. C.
POWERS & ANDERSON, INC., RICHMOND, VA.

In Medical Circles

it has gradually but surely become an established belief that quality is a fundamental asset, that it pays — and pays well — to use the best. In other words, that the time and effort employed in specifically ordering a product that has been shown to be the most effective and dependable of its class — and in making sure that it is the one dispensed by the druggist and actually used by the patient — is time and effort well spent.

No product better exemplifies the foregoing than Dioxogen. As the best known and most widely used peroxide of hydrogen,

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holds the place it does to-day in the regard of medical men, by sheer force of merit—and the following advantages—

In purity and oxygen-liberating power, Dioxogen exceeds U.S. Phar. standards for H_2O_2 by 25%.

Dioxogen is odorless, almost tasteless, and entirely free from acids and acetanilid. It is also colorless and does not stain the skin.

Absolutely non-poisonous and non-irritating, Dioxogen is not only the most potent, but the safest and most harmless of antiseptics.

Applied to wounds, Dioxogen promptly destroys all bacteria, and stimulates the reparative processes of the tissues.

Dioxogen is the one powerful germicide at the physician's command that can be freely used anywhere and anytime without the slightest danger.

With Dioxogen possessing the qualifications it does, and assuring its users a degree of safety, efficiency and freedom from objectionable effect that no other equally potent germicide can, is it any wonder that it has become the standard antiseptic in the home, the school, the office and the factory?

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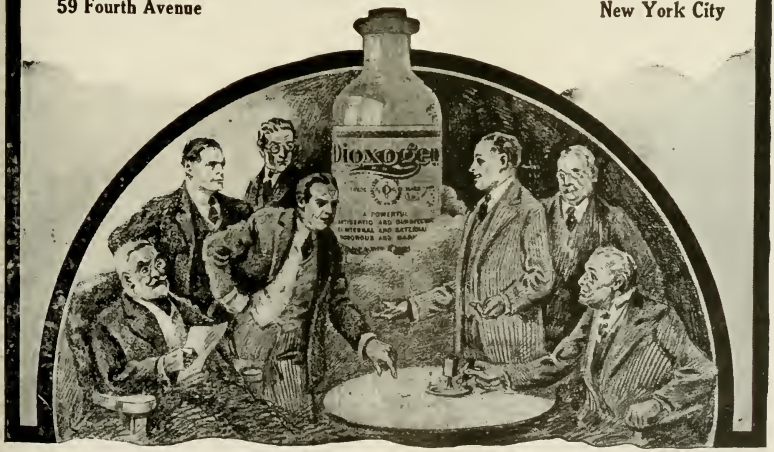

Six Scholarships.

The New York Post-Graduate Medical School and Hospital announces that there will be available this year six scholarships under the terms of the Oliver-Rea Endowment.

The purpose of the Endowment is to award scholarships to practicing physicians of the United States to defray in full the expenses of tuition at the New York Post-Graduate Medical School.

According to the wishes of the donor, physicians in the State of Pennsylvania will receive preference in the award of these scholarships.

Applications may be sent to the President of the New York Post-Graduate Medical School and Hospital, Twentieth Street and Second Avenue, New York City.

Sex and Blood Pressure.

It has long been realized that age is a factor which must be taken into consideration in giving an answer as to what constitutes the normal arterial blood pressure. There are also variations that seem to be associated with sex. In examining the numerous data collected by Alvarez at the University of California, it appears that the women before the menopause represent almost exclusively a type endowed with a comparatively low blood pressure. There is far greater uniformity and less variation in the blood pressure readings of large numbers of them than is true of men at the same periods of life. Alvarez has therefore suggested that perhaps the ovary is in some way able "to cover up or hold latent the tendency to hypertension which we will presume the women inherit equally with the men." When the ovarian function fails, therefore, the natural tendency for the appearance of higher arterial pressures soon makes itself appreciated. Perhaps this hypothesis will help to explain the assertion sometimes made that hypertension often develops early in women who show signs of insufficient ovarian function, such as scanty and painful menstruation, sexual anesthesia, male distribution of body hair, infantile uterus, etc. At any rate, the phenomena of hypertension appears to be suppressed in women as long as the ovaries function well. On the other hand, the statistics show that the large increase in the incidence of hypertension comes ten years later in men than in women. Apparently, Alvarez concludes, a strenuous life has less to do with this disease than has the quieting down of the sexual functions.—Jour. A. M. A., Nov. 27, 1920.

Enlarging Mount Sinai Hospital.

The new private pavilion for Mount Sinai Hospital, planned by Arnold W. Brunner, architect, and Dr. S. S. Goldwater, acting as consultant, is now under roof, and is being made ready for occupancy in the fall. This building covers a whole block front on Fifth Avenue, facing Central Park. Seventy-five private rooms out of a total of 131 have individual balconies with a new type of modified French door, designed to meet winter as well as summer requirements. A new children's pavilion and an auditorium are also approaching completion. With these additions, the Mount Sinai group consists of seventeen buildings, ranging in height from two to eight stories. The capacity of the enlarged hospital is 750 beds, making it the largest private general hospital in the United States.

Protecting the Flour Supply.

Hospitals that carry any considerable quantity of flour in storage should exercise great care to see that it is properly protected against dampness. A good plan is to pile the surplus stock of flour on inch boards laid on two by fours over concrete, but never directly on the concrete. Another thing to guard against is excess of humidity, which is likely to cause caking or other deterioration. One of the best preventives of this is a free circulation of air which strongly counteracts extreme humidity or heat. As flour rapidly absorbs odors, care should be taken not to use tarred paper or other strongly smelling materials near the place where flour is stored. Care should also be exercised in the use of disinfectants on account of the effect they may have on the flour, either through their odor or through damaging the flour in other ways, as in the case of sulphur dioxide, which destroys the gluten in the flour. Proper care should also be taken to protect flour against rats, mice, and insects.

Remember

What

Gray's Glycerine Tonic Comp.

accomplished during the past two years in the treatment of influenza. Many physicians, by its judicious use, fortified their patients against the dangers of this dreaded disease. How widespread and serious will it prove this year? Gray's Glycerine Tonic Comp., will no doubt be indicated and physicians may count on obtaining the desired results from its use.

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Evolution of Preventive Medicine.

It has been less than a century, Charles V. Chapin, Providence, R. I. (Journal A. M. A., Jan. 22, 1921) says, that a permanent government organization for health purposes has been maintained. There have been three fairly well-defined phases of this movement. The first concerned itself chiefly with the environment, the second with the isolation of the sick, and the third with personal instruction and with cure. The modern health movement had its origin in England nearly a hundred years ago. Interest in public health developed more slowly in the United States, largely, perhaps, owing to the slower development of the evils of urbanization. The

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filth theory of disease was that decomposition and fermentation of animal and vegetable matter gave rise to poisonous gases, or, as some thought, to living germs, which are carried by the air and, falling on human beings, caused in them the epidemic diseases. Hence, the principal aims of early promoters of public health were clean streets and yards, clean houses, removal of all "nuisances," the prevention of crowding, both of houses on the land and of people in the houses, better house construction, the buildings of sewers, the construction of water closets or yard privies, and the provision of unpolluted water. Good results attended these efforts. Chapin reviews the progress made in preventive medicine in the United States. He states that the bulk of the medical profession still looks askance at the invasion of the field of curative medicine by the state, and the leaders and molders of public opinion do not take kindly to medicine's becoming more of a governmental function. Nevertheless, he says, it seems unlikely that the movement is going to be checked and it is a tremendous responsibility for those to whom is given the opportunity to direct the movement aright. It is perhaps best that progress should be slow and that we should feel our way. It is perhaps also good that attention seems to be chiefly directed at present to improving the clinic or dispensary and making it available for all of the poorer portion of our population. There is much to be done right there. To the writers of press articles and to the compilers of health almanacs, Chapin would say: "When facts are not at hand, have the courage to say nothing. Let us beware of the compulsory treatment of disease. That is another rock on which the future of preventive medicine may be wrecked. Education is better than legislation. It is slower, but surer."

Psychanalysis.

Recently the minister of a prominent church in Chicago was asked by the head of the social work department to put his approval on the establishment of a lecture course on psychanalysis. Being in doubt, he conferred with several medical men of his congregation. Finally a neurologist settled the matter by saying: "By all means have it. It should prove very popular. Half the congregation is already crazy and the other half is en route to the asylum." The jest was not wholly a jest. People are paying too much attention nowadays to their minds. An abnormal interest in the workings of one's own mind produces either an introspective philosopher or a "common nut." When the interest is related more or less distinctly to a concealed but nevertheless obvious fascination for cogitation on things sexual, it has elements of danger. Physicians are beginning to wonder where the normal interest of the layman in these subjects ends and the scope of the psychiatrist commences. We are flooded with books on the subject by lay psychanalysts; the "movies" picture it; the theaters dramatize it; the churches have lectures on it. In the not too distant future the psychanalytic craze, if it continues, will make the medical psychiatrist a very busy man.—Jour. A. M. A., Jan. 20, 1921.

Prenatal Infestation With Parasitic Worms.

It is among the nematodes that prenatal infestation seems to offer the most important problem. William W. Cort, Baltimore (Journal A. M. A., Jan. 15, 1921) believes that with further studies it will be found to be not infrequent with hookworm. Other species in which such infestation might occur on account of what we knew of the migrations of the larval stages are Strongyloides stercoralis, Ascaris lumbricoides and possibly the various species of the Filaridae. It seems possible also that the wandering habit of the larvae is a part of the life cycle of Trichuris trichiura and other human nematodes, which would make possible prenatal infestation in these forms also. The literature on the subject is reviewed briefly.

High Grade Heart Block.

A case of high grade heart block is reported by S. Calvin Smith, Philadelphia (Journal A. M. A., Jan. 1, 1921). The patient was an active youth of 20 years, with negative previous history. The condition evidently had existed since childhood, despite the fact that heart block is usually encountered in persons past the meridian of life with definite histories of previous infections, and despite the fact that the average life expectancy in high grade heart block is three years. The case was studied under various circumstances,

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including the changes induced by posture, respiration, exercise, vagal pressure and drug administration; the graphic records indicated that on forced expiration the heart block disappeared and that a normal sequence of cardiac events ensued. Fluoroscopic study confirmed these findings. Roentgenograms indicated that the position of the heart was altered when the cardiac mechanism became experimentally natural, thus suggesting that the lessening of traction or the relief of pressure on heart tissue may play a part in the experimental re-establishment of natural cardiac rhythm.

The case reported by Robert A. Kilduffe and W. B. McKena, Pittsburgh (Journal A. M. R., Jan. 1, 1921), derives its interest from the successful result obtained in a well-marked and typical example of acute tetanus in which the beginning of treatment was delayed. The trauma was sustained September 9. The wound received hospital treatment, but a prophylactic injection of tetanus antitoxin was not administered. Eight days after the original injury, the patient was conscious of pain in the jaws and arms, and some slight stiffness of the jaws, which became progressively worse. He consulted a physician and received some medicine which gave no relief. September 20 he came under the care of the authors. Immediately on admission, the patient was given 10,000 units of antitoxin—all that was on hand. A few hours later he became extremely rigid, the jaws tightly clenched, and a slight retraction of the neck was noticed, though typical bowing of the body as a whole did not occur. He complained bitterly of pain. The wound, after having been thoroughly cleansed and after drainage was established, was kept wet with a constant hydrogen peroxide drip. Anaerobic cultures gave a growth of typical tetanus bacilli of classic shape. Five hours after admission the patient received 20,000 units of antitoxin intravenously. He was also given 40 grains of chlorbutanol by rectal injection, every four hours for two days. The antitoxin treatment was entirely intra-

venous. A total of 140,000 units was given during six days of treatment. The patient was discharged October 11, perfectly well, except for some muscular aching in the limbs comparable to that found after severe or unaccustomed muscular exercise, the abdominal muscles still being somewhat rigid.

A Diversity of Interests.

Regularly there come to the editorial office of The Journal about a thousand periodicals a month. There are the purely technical medical journals; the official publications of national medical associations abroad and of state associations at home; the bulletins of district, county and city medical societies; the house organs of pharmaceutical manufacturers; hospital publications, and what not, medical or near medical. The whole reveals a remarkable diversity of interests, not only among different nations and different states, but peculiarly also among different county societies. Here a county society is building its own home; there a society is considering legislation affecting medical cults; here a group is discussing health insurance — perhaps logically and dispassionately; another opposes social medical legislation, while still another is urging consideration of legislation in behalf of maternity and child welfare; many confine their activities exclusively to scientific programs. Here a lone voice shrieks that the doctors are not sufficiently commercial. And so it goes! How many of these societies—how many of us individually—see beyond our own limited circle? How many of us have sufficiently broad and open minds to subordinate our own interests in order to consider what is best for mankind as a whole? We wonder.—Jour. A. M. A., Jan. 29, 1921.

The Spiritual Advancement of the Physician.

It is evident that general educational and cultural advancement has occurred among physicians within the last few decades. The frontier atmosphere and the crude manners of pioneer days are largely giving way to the finer type and character of a more civilized state. This advancement may be traced definitely to the broad fundamental education now being required of medical students, which gives them the fine discriminating sense of the cultured man and enables them to measure and evaluate the factors that go to make up human life. Of course, such extension of medical education means also better professional equipment. In urging cultural advancement it is not meant that physicians should become artists, musicians or poets, or even perhaps experts in the realm of sciences indirectly related to medicine. Although the physician need not have an intimate knowledge of all those matters of higher education comprehended under the term "humanities," he should nevertheless have some acquaintance with these subjects. In every community today, one finds physicians who exhibit cultivated taste. While acknowledging first obedience to the vocation of healing the sick, they find in the by-paths of artistic activity not merely amusement and recreation, but also opportunity for contributing to community betterment.—Jour. A. M. A., Dec. 11, 1920.

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Traffic's blocked to those that shirk.

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And now is the time to start on your way,
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It will seem like a tough old fight,
But once on your way just bear up your load
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You will pass through many towns each day
Such as Failure, Gloom, and Despair;
At each of these stations just keep on your way,
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After you have entered the town of "Success,"
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Once inside you will find both comfort and rest,
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Rabies Vaccine.

A. M. Stimson, Washington, D. C. (Journal A. M. A., Jan. 22, 1921) calls attention to the fact that rabies vaccine, prepared by various procedures, is now available throughout all portions of the United States to the extent that it may fairly be said that no exposed person need die of rabies for lack of injections. Many state boards of health are prepared to furnish it free of cost to the indigent, and the cost of the commercial preparations is not prohibitive except to the destitute, for whom other provisions could probably be made in almost every instance.

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Lv. Greensboro, Train No. 12	10:35 P. M.
Lv. Danville, Va., Train No. 12	12:40 A. M.
Ar. Norfolk, Va., Train No. 12	9:00 A. M.
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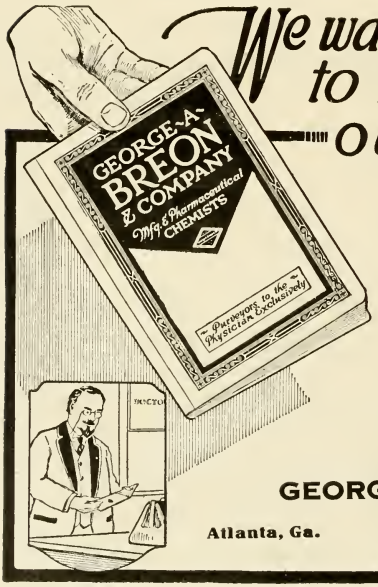

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The Health Officers' meeting will be April 25.

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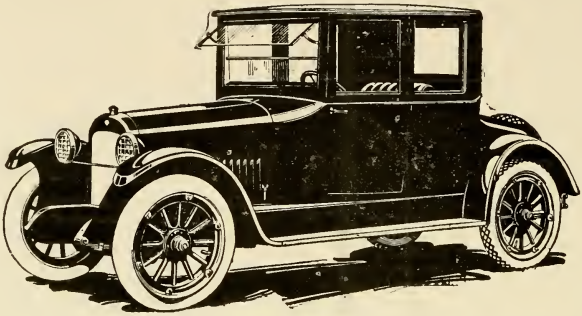

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Publications Received

THE ANATOMY OF THE NERVOUS SYSTEM, from the standpoint of development and function. By Stephen W. Ranson, M.D., Ph.D., Professor of Anatomy in Northwestern University Medical School, Chicago. Octavo volume of 395 pages with 260 illustrations, some of them in colors. Philadelphia and London: W. B. Saunders Company, 1920. Cloth, $6.50 net.

The author's preface says in part: "In the pages which follow, the anatomy of the nervous system has been presented from the dynamic rather than the static point of view; that is to say, emphasis has been laid on the developmental and functional significance of structure. The student is led at the very beginning of his neurologic studies to think of the nervous system in its relation to the rest of the living organism. Structural details, which when considered by themselves are dull and tiresome, become interesting when their functional significance is made obvious. This method of presentation makes more easy the correlation of the various neurologic courses in the medical curriculum."

TRAUMATIC SURGERY (Second Edition) By John J. Moorhead, M.D., F. A. C. S., late Lt. Col., Med. Corps, American Expeditionary Forces; Professor of Surgery and Director Department of Traumatic Surgery N. Y. Post Graduate Medical School and Hospital. Second edition, entirely reset. Octavo of 864 pages, with illustrations. Philadelphia and London: W. B. Saunders Company, 1921. Cloth, $9.00 net.

Many changes and additions have been made in this second edition. Indeed much of the text has been entirely recast.

The war brought about a closer association of British, French, Belgian and American surgeons and with it a free exchange of experiences and deductions. Out of this large experience with war trauma and traumatic surgery, it is found that certain valuable methods are applicable to civil traumatic surgery, notably as to wounds, compound fractures, joint injuries and methods of functional re-education. The author has incorporated much of this in the text.

With the increasing prevalence of motor accidents and the obvious fact that such a large percentage of these depend on the general practician not only for first aid but for the entire treatment without the aid of some special surgeon the author has devoted considerable space to this form of injuries. He keeps before the reader the fact that the maximum care and attention means the minimum of disability.

A PRIMER FOR DIABETIC PATIENTS—A brief outline of the principles of diabetic treatment, sample menus, recipes and food tables. By Russell M. Wilder, M.D., May A. Foley and Daisy Ellithorpe, Dietetians, the Mayo Clinic. 12mo of 76 pages. Philadelphia and London: W. B. Saunders Company, 1921. Cloth, $1.50 net.

THE PRINCIPLES OF THERAPEUTICS. By Oliver T. Osborne, M.D., Professor of Therapeutics, Department of Medicine, Yale University. Octavo of 881 pages. Philadelphia and London: W. B. Saunders Company, 1921. Cloth, $7.00 net.

PRINCIPLES OF HYGIENE (The New (7) Edition. A practical manual for students, physicians and health officers. By D. H. Bergey, M.D., Dr. P.H., Assistant Professor of Hygiene and Bacteriology, University of Pennsylvania. Seventh edition, thoroughly revised. Octavo of 556 pages, illustrated. Philadelphia and London: W. B. Saunders Company, 1921. Cloth, $5.50 net.

OPTIMISTIC MEDICINE, or the early treatment of simple problems rather than the late treatment of serious problems. By a former insurance man. F. A. Davis Company, Philadelphia, Pa. 320 pages. Price, $3.00 net.

The dominating note of this book is the importance of maintaining an optimistic attitude at all times if a man or woman would preserve a sound mind in a sound body. There are many examples given which show how the well may stay well and the sick and discouraged may "come back" by the systematic and

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HANDBOOK OF ELECTROTHERAPY for Practitioners and Students. By Burton Baker Groves, M.D., President of the Western Electro-therapeutic Association, Colorado Springs, Colorado. F. A. Davis Company, Philadelphia. 420 pages; 103 engravings. Price, $4.00 net.

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PRACTICAL TUBERCULOSIS. By Herbert F. Gammons, M.D., Supt. Woodlawn Sanatorium, Dallas, Texas. 160 pages. Price, $2.00 net. C. V. Mosby Company, St. Louis, Mo.

A book for the general practitioner and those interested in tuberculosis.

PRACTICAL PSYCHOLOGY AND PSYCHIATRY. By C. B. Burr, M.D., Flint, Mich. 270 pages, fifth edition, revised and enlarged, with illustrations. F. A. Davis Company, Philadelphia. Price, $2.00 net.

This work has been prepared for use in training schools for attendants and nurses and in medical classes, and as a ready reference for the practitioner.

EYE, EAR, NOSE AND THROAT NURSING. By A. Edward Davis, A.M., M.D., and Beaman Douglas, M.D. Second edition, revised. 346 pages; 32 illustrations. F. A. Davis Company, Philadelphia. Price, $2.50 net.

The book is meant simply as a guide for nurses and students in the care of various diseases of the eye, ear, nose and throat, and to instruct the nurse as to her exact duties during and following operations on these organs.

RATIONAL TREATMENT OF PULMONARY TUBERCULOSIS. By Charles Sabourin, M.D., Medical Director of the Durtol Sanatorium, Puy-de-Dome, France. Authorized English translation. 440 pages. Price, $2.50. F. A. Davis Company, Philadelphia, Publishers, 1921.

A New Preparation of the Vitamines.

Everybody is talking about the vitamines, and it is the almost daily experience of the practitioner to be called upon to explain the nature of these curious and mysterious substances and their relationship to the welfare of the human body. It is quite possible that even some physicians are not aware that there is but one available preparation that contains the three known vitamines, the preparations most popular just now containing only one, the antineuritic vitamine or water-soluble B.

Recently Parke, Davis & Co. announced the development in their Research Laboratories of a physiologically tested product containing the three vitamines. This preparation, called Metagen, is supplied only for the use of physicians, in the form of capsules of 5 grains each of the powder.

Metagen contains (1) the fat-soluble vitamine "A" found in the fresh milk and butter of healthy cattle, in cod-liver oil and some plants; (2) the water-soluble vitamine "B," which exists in yeast, nuts, and the husk and germ of grains; and (3) the water-soluble "C," the chief source of which is the citrus fruits—oranges, limes, etc., and certain vegetables.

It is a well-established fact that each of the three types of vitamine, fat-soluble A, water-soluble B and water-soluble C, plays a specific role in nutrition. To insure normal physiologic function, all three must be present in the body. The absence of one or more is in all probability the cause of the various deficiency diseases. Thus, a lack of the fat-soluble A vitamine is apparently the cause of rickets, pellagra, and dental caries, in the latter case associated with a deficiency of the calcium salts. The absence of the water-soluble B is responsible for the appearance of polyneuritis or the beriberi of the Orient, and for failure of growth in artificially fed infants. The water-soluble C vitamine is essentialy antiscorbutic, and its absence from the dietary, as of sailors on long voyages, is responsible for the appearance of scurvy among the crew, and for infantile scurvy as well.

As the vitamines are not harmful, it is manifestly better in the treatment of deficiency diseases to prescribe a preparation in which all of them are present, rather than to risk failure by the use of a single vitamine. The same may be said of the treatment of convalescence from acute illness, in which the aid of the vitamines is invaluable in stimulating the nutritive processes.

The field for the use of Metagen is very wide. One has only to consider briefly the fact that a large proportion of the dietary of most town and city dwellers is in all probability lacking in vitamines. This is an age of canned foods, polished rice, artificial butter, condensed milk, white flour and other refinements of our twentieth century civilization, all of which make for convenience, perhaps, but their general use presents a problem in nutrition that the physician is often called upon to solve. With the help of the three vitamines in Metagen his task should be materially simplified.

The LINGERING LEG ULCER

often becomes an "eye-sore" to the conscientious physician whose therapeutic resources have come near being exhausted—with the patient little, if any, improved.

FOLLOWING THE EXPERIENCE OF TWO PHYSICIANS
(One in New York, the other in New Jersey)
WITH

Antiphlogistine
TRADE MARK

IN THE SUCCESSFUL TREATMENT OF

CHRONIC INDOLENT LEG ULCER

(One of twenty years', the other of thirty-four years' standing)

why not try this stimulating, antiseptic application, with or without Ichthyol, in your next case of this often intractable, distressing disease? Relief in a few cases will enhance the doctor's reputation with grateful patients.

THE DENVER CHEMICAL MFG. COMPANY
NEW YORK

Typhoid Vaccination.

In a recent French medical journal the statement was made by Achard that since the war only the women were having typhoid fever, as all the men were protected because of their army vaccinations. If more proof were needed of the efficacy of anti-typhoid vaccination this would command attention.

But the value of this personal prophylactic measure has been proved repeatedly. Army and navy statistics for the whole world show that the results are as good if not better than those obtained with smallpox vaccination. Anti-typhoid vaccination at this time needs no brief. Therefore, the interest in the above statement lies not so much in its evident testimony for the value of protective inoculation for the men in the French army as for the obvious need of it for the women who stayed at home. In short, the world need is for vaccination of the civilian population if the goal of typhoid elimination is to be reached.

"To think rationally of disease is healthy"—and to teach individuals to think sanely is most certainly a part of the physician's function. No campaign for the eradication of any disease is carried far enough to be truly effective unless people are informed of known and proved methods of personal prevention. This is especially true of a disease like typhoid and the allied infections which have to do with the two essentials of human existence—drink and food, and from which nothing except personal immunity can protect surely against the carelessness, thoughtlessness and indifference of others.

Eli Lilly & Company is urging physicians to protect their patients by vaccination against typhoid and paratyphoid fevers. Now is the time, says the Lilly Company, to inaugurate such a campaign and the use of Lilly Typhoid Vaccine or Typhoid Mixed Vaccine (TAB or Triple Typhoid) is recommended as the best method of preventing the disease and reducing epidemics. Further particulars may be had by addressing the principal office of the company at Indianapolis.

Lilly biologicals are supplied through the drug trade. They are accessible, properly stored, fresh and potent.

Send for Your Copy Now.

The George A. Breon catalogue is a veritable mine of information; it is complete to the most minute detail and contains their complete list of intravenous specialties, intramuscular and hypodermic solutions, biologicals, tablets, all forms, syringes, thermometers, needles, hypodermic outfits, etc. It is an illustrated pocket edition and very convenient.

They will gladly mail a copy, postpaid, to any Southern Medicine and Surgery reader upon request. A postal will do, write it today. We believe every physician will find this catalogue a convenience. Address: George A. Breon & Co., Kansas City, Mo.

SEABOARD
AIR LINE
RAILWAY

When the Bodily Forces Are Depressed

Gray's Glycerine Tonic Comp.

[*Formula of Dr. John P. Gray*]

Improves the appetite
Promotes digestion and nutrition
Restores functional activity of vital organs
Increases nerve force
Makes sound sleep possible
Raises the quality of the blood
Stimulates the liver and the flow of the bile
Strengthens the circulation
Aids elimination of body wastes
Gradually but surely builds up the strength and vitality of the body.

It is always essential, however, that the patient gets the genuine Gray's Glycerine Tonic Comp

The Purdue Frederick Co.
135 Christopher St., New York City

HOTEL RICHMOND

"300 Rooms FIRE PROOF 300"
Facing Capital Park
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Reasonable rates and Food of Quality.

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Copies of Scientific Articles.

(From the Office of the Permanent Secretary, 1701 Massachusetts Avenue, Washington, D. C.)

Many scientists lack the library facilities which their work demands. They are compelled either to journey to distant libraries or to try to borrow books by mail. Often it is difficult for them to locate something that is badly needed, and again it may be impossible to borrow it.

The Research Information Service of the National Research Council is prepared to assist investigators by locating scientific publications which are not generally or readily accessible. It will also, as is desired, have manuscripts, printed matter or illustrations copied by photostat or typewriter. The cost of copying varies from ten to twenty-five cents per page. No charge is made for this service unless an advance estimate of cost has been submitted and approved by correspondent.

Requests for assistance should be addressed, National Research Council, Information Service, 1701 Massachusetts Avenue, Washington, D. C.

Roentgen Ray and Tuberculosis in Infants and Children.

As a result of a statistical study of forty-four infants and children at the Boston Consumptives' Hospital, Frederick W. O'Brien and Forrest B. Ames, Boston (Journal A. M. A., May 28, 1921), found that: 1. (a) The von Pirquet and intracutaneous skin reactions are reliable guides to infection with tubercle bacilli, and the number of positive reactions increase from infancy up through childhood, over 10 years of age, all patients reacting. (b) In twenty-six of thirty-six positive skin reactions, the roentgen ray disclosed the site of infection to be intrathoracic.

2. D'Espine's signs as a clinical index of tuberculosis of the bronchial lymph nodes is of relatively little value, being elicited only eleven times, as against roentgen-ray evidence of glandular enlargement in twenty-eight cases.

3. Three cases of positive sputum were found in fourteen diagnoses of chronic pulmonary tuberculosis.

4. Fourteen cases of chronic pulmonary tuberculosis of the adult type were found. This suggests that the so-called phthisis is more common in children than has been stated by writers of textbooks.

5. Fifteen cases, negative clinically, showed definite roentgen-ray signs of marked structural changes consistent with tuberculous infection. This raises the question as to whether these children are to be regarded as more likely to develop clinical tuberculosis and should thus be watched carefully and roentgenographed at fairly frequent intervals.

Dislocation of Sacro-Iliac Joint.

Alexander Gibson, Winnipeg, Manitoba (Journal A. M. A., May 28, 1921), cites a case of a boy, aged 8, who was struck by an express train and sustained a dislocation of the left sacro-iliac joint. A roentgenogram showed the separation between the sacrum and the ilium. A curved incision exposed the region of the injury from behind, and with an electric saw, the portion of the ilium which projected posteriorly was removed. The adjacent portions of bone—sacrum and ilium—were then freshened, and the detached piece of bone was jammed in between them, no sutures being used to keep the graft in place. The patient was returned to bed with a pelvic binder, and was kept recumbent for two months. He can walk and run as well as he ever could. He has no pain and no stiffness in the hip region.

The scratch of a lion's claw is almost as deadly as his bite, for he never cleans his nails, and he always carries under them rotting meat that is rank with deadly germs. Flies and water bugs do the same thing on a smaller scale; and "Don't forget," says the U. S. Public Health Service, "that they never wipe their feet."

And now we have the woman dental hygienist. She does not pull nor fill teeth and consequently is not a terror to children. Instead, she limits her work to cleaning and polishing the teeth above the gums. The U. S. Public Health Service says that this is most helpful in making the gums healthy and in preventing decay. Twelve States have already legalized such practice by women.

Pond's Extract

Mouth Cleanliness

As a pleasant and effective means of keeping the mouth and throat clean and aseptic, there is nothing better than a solution of Pond's Extract—two tablespoonfuls to a half glass of quite warm water used as a mouth wash and gargle every three or four hours; if the mouth or tongue is irritated and sore, these conditions will be promptly corrected. The use of this mouth wash assures a clean mouth and a wholesome breath.

POND'S EXTRACT CO., New York and London

Vapo-Cresolene

For Forty Years

Vaporized Cresolene

has held its position as a valuable remedy for certain bronchial diseases of childhood.

It is particularly useful in the treatment of the very young.

Cresolene is indicated in Whooping Cough, Spasmodic Croup, Bronchitis, Asthma, Broncho-pneumonia, Coughs and the bronchial complications incident to Scarlet Fever and Measles.

Vaporized Cresolene is destructive to Diphtheria bacilli and may be advantageously used in connection with the treatment of this disease.

Let us send you our descriptive and test booklet which gives liberal sample offer.

THE VAPO-CRESOLENE CO., 62 Cortlandt Street, NEW YORK. Leming-Miles Building, Montreal, Canada

SEABOARD

AIR LINE

RAILWAY

Don't give the baby patent medicine. f you feel you must use advertised emedies try them on yourself, or better still, on the dog. Let your family octor attend to the baby.

The U. S. Public Health Service estinates that at least 500 and possibly ,000 lepers are at large in the United States, and that the number is increasng. The government did not start work n its Federal Home for Lepers a minte too soon.

Sal Hepatica

THE STANDARD SALINE LAXATIVE

Samples on request

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X-RAY PHOTOGRAPHIC SUPPLIES

Eastman Duplitized X-Ray Films
Sizes 5x7 to 14x17

Eastman Improved Dental X-Ray Films
Regular or Extra Fast

Seed X-Ray Plates

Prepared X-Ray Developing Powders, Prepared Fixing Powders, Barium Sulphate

Complete Stock of Chemicals for Preparing Developers, etc.

For quick service, write or wire

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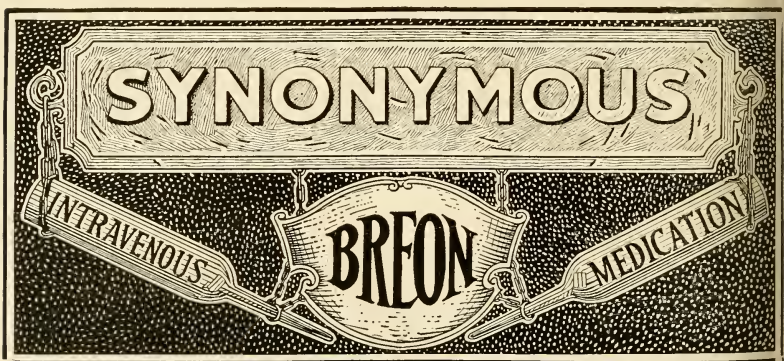

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The secret of our success has been in supplying the profession with sincere, efficacious products.

Our patrons are enthusiastic because they are obtaining results. If you are not receiving our monthly magazine, "Breons Medical Gleanings", the only exclusive intravenous publication issued, we shall be pleased to place you on our mailing list---you have only to request it.

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NEURILLA FOR NERVE DISORDERS NEURILLA
If Patient suffers from THE BLUES (Nerve Exhaustion), Nervous Insomnia, Nervous Headache, Irritability or General Nervousness, give four times a day one teaspoonful NEURILLA
In nervous fretfulness of teething Children give five to twenty drops.
DAD CHEMICAL COMPANY, NEW YORK AND PARIS.

Hookworm and Other Intestinal Parasites in Ecuador.

Hookworm disease, E. Ray Royer, Guayaquil, Ecuador (Journal A. M. A., Dec. 18, 1920), is very prevalent in Ecuador. Trichocephalus dispar and Ascaris lumbricoides are found in a large percentage of the population, and diarrhea and subsequent anemia are not unusual sequelae of these parasites. Chenopodium oil has proved more effectual in the removal of intestinal parasites, with the exception of Trichocephalus dispar and the tapeworm family, than the older vermifuges. The former has been found more resistant to treatment than other species, and neither chenopodium nor other vermifuges or anthelmintics seem to exert a marked influence on their removal or destruction. A classical symptom often mentioned in textbooks as occurring in hookworm disease, i. e., a triangular spot, or spots, on the dorsum of the tongue, appearing as though a pen had been wiped on it, Royer says, is of little value as a diagnostic sign. In the series of cases reported, this sign was not observed in a single instance. An interesting feature, and perhaps an unusual one, was the fact that while the initial survey of employees revealed an average infestation of 58.66 per cent with hookworm, in forty-six cases of pulmonary tuberculosis, hookworm infestation could not in a single instance be demonstrated, though the pulmonary condition apparently exerted little influence on other species of parasites, which were present in about the usual number.

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These laboratories are equipped for making every test of clinical value in the diagnostic study of medical and surgical cases. Only standardized methods and technique are used.

In addition to the diagnostic study of cases there are adequate facilities for the x-ray and radium treatment of conditions in which these forms of treatment are indicated.

Fee lists and containers for pathological specimens and information in reference to x-ray and radium work furnished upon request.

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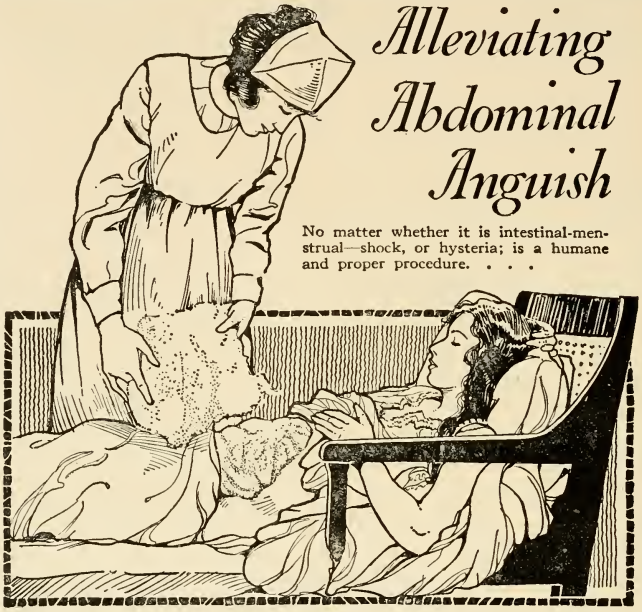

Alleviating Abdominal Anguish

No matter whether it is intestinal-menstrual—shock, or hysteria; is a humane and proper procedure. . . .

Abdominal pain indicates incipient, imminent, or established

INFLAMMATION

Relieving congestion—releasing tension—restoring nervous equilibrium — rallying the patient's vital forces; what a sequence of *scientific common sense!*

Antiphlogistine
TRADE MARK

relieves abdominal anguish by its continuous, moist heat; by promoting normal circulation; by its hygroscopic, osmotic power, and its stimulating action upon the cutaneous reflexes.

Antiphlogistine should be applied as hot as patient can bear—covered with cotton batting.

THE DENVER CHEMICAL MFG. COMPANY
NEW-YORK

BACTERIA causing and complicating HAY FEVER, COLDS, CORYZA, LARYNGITIS, PHARYNGITIS, ADENITIS, OZENA, BRONCHITIS, ASTHMA, PLEURISY, PERTUSSIS, PNEUMONIA. TUBERCULOSIS develop the infection not only because they break down resistance but because resistance is inadequate to these bacteria during the inception of the infection.

Sherman's Polyvalent Vaccines are DEPENDABLE ANTIGENS in the prevention and treatment of respiratory infections.

DATA ON REQUEST.

Bacteriological Laboratories of G. H. SHERMAN, M. D., Detroit, U. S. A.

"LARGEST PRODUCER OF STOCK AND AUTOGENOUS VACCINES"

Iodinized Emulsion
(SCOTT)
THE IDEAL INTESTINAL ANTISEPTIC.
Indicated in Typhoid and other slow fevers, Dysentery, Chronic Diarrhœa and gastro-intestinal troubles.

Creosotonic
(SCOTT)
THE IDEAL SYSTEMIC ANTISEPTIC.
Invaluable in Tuberculosis, Bronchitis, Pneumonia, Asthma, Catarrh and as a tonic after all exhausting diseases.

Samples and Literature free on request.
The Dawson Pharmacal Company, Incorporated. Dawson Springs, Kentucky.

Wanted—Location for general practitioner (preferably in N. C.) Graduated in class A college. 2 years hospital, 1 year army, 3 years general and contract practice. Age 38, married.
T. H. CHESNUTT, Atkinson, Ga.

ANEMIC GIRLS

In the treatment of anemic girls, an essential therapeutic point is to choose a blood-maker and tissue-builder that not only is of definite potency but also which may be continued over long periods without proving objectionable to these capricious patients. Otherwise, full advantage will not be derived from its use.

Cord. Ext. Ol. Morrhuae Comp. (Hagee) is a preparation that meets these demands. It is of marked value as a blood-maker and tissue-builder and is also palatable in high degree, as a result of which palatability it may be continued for long periods without proving objectionable. For these reasons Cord. Ext. Ol. Morrhuae Comp. (Hagee) is of unusual value in the treatment of anemic girls and delicate children.

When Iodine Is Indicated
use
Burnham's Soluble Iodine
and thus assure the results you seek.

***B. S. I.* can be used in adequate dosage, over long periods, without gastric disturbance,**
or other disagreeable effect.
A preparation that offers remarkable possibilities in the treatment of many intractable diseases. If you have some case that bothers you, our medical adviser will be glad to outline what you may accomplish with B. S. I.

Burnham Soluble Iodine Co.
Auburndale, Mass.

HAVE YOU TRIED
GUDE'S PEPTO-MANGAN
IN TABLET FORM?

SAME
iron and manganese content—
organic combination—
therapeutic action
AS THE LIQUID

Of special convenience for teachers, travelers, and businessmen and women.

GUDE'S PEPTO-MANGAN is, and has been for thirty years, the *standard* hematinic and general tonic and reconstructive in Anemia, Chlorosis, Loss of Appetite and exhaustive conditions generally.

GUDE'S PEPTO-MANGAN both in Liquid and Tablet Form for sale by all druggists. Samples upon application.

M. J. BREITENBACH CO., New York, U. S. A.

Our Bacteriological Wall Chart or our Differential Diagnosis Chart will be sent to any Physician upon request.

The Sluggish Bowel

Constipation in most instances is due to atonicity of the muscular structures and deficiency of the secretions. To restore tone to the intestinal muscles and increase glandular activity, there is no remedy so generally satisfactory as

PRUNOIDS

Unlike the great majority of laxatives, Prunoids never give rise to griping, nausea, or reactionary constipation. Their whole effect is gentle and pleasant because entirely physiological.

Cardiac Debility

When other cardiac remedies have proven unsatisfactory, the weak, irregular or extremely rapid heart will be promptly steadied, strengthened and slowed by the systematic use of

CACTINA PILLETS

The pronounced relief thus afforded cardiac patients unquestionably accounts for the fact that Cactina Pillets is more extensively employed by medical men to-day than any other heart tonic.

SULTAN DRUG CO. ST. LOUIS, MO.

Tuberculosis and Wasting Diseases

When cod liver oil or fatty foods cannot be digsted or assimilated, but tend to further upset an already weakened and deranged digestion, other means must be resorted to, for building up and restoring the strength of the body.

Clinical experience has shown that under these conditions

Gray's Glycerine Tonic Comp.

may be used in the place of cod liver, or other oils, with very great satisfaction, as well as advantage, to the patient.

Administered in two to four teaspoonful doses, three or four times daily, Gray's Glycerine Tonic increases the appetite, promotes digestion, and used in conjunction with good food and open-air living, progressively improves the bodily nutrition. Thus in tuberculosis and chronic bronchial affections, it gives substantial aid in checking cough, decreasing night sweats, and restoring the patient's vitality and strength.

THE PURDUE FREDERICK CO., 135 Christopher St., New York

The N. C. Tuberculosis Sanatorium has just completed a new addition, which gives them accommodation for 64 more patients and also much needed room for offices and laboratories. The other buildings have been repaired and freshened up. Work is being started on a new and commodious kitchen, cold storage and dining room.

These new buildings and the repairs will enable the Sanatorium to care for 200 additional patients, so it is hoped that the most needy of the state's tuberculous may be cared for.

Dr. James H. Smith and **Dr. Carrington Williams** announce an association in the practice of medicine and surgery, 400 E. Franklin St., Richmond, Va.

Dr. J. S. Clifford, Charlotte, N. C., returned from three months' trip to Europe. During his trip he visited Ireland, Scotland, France and Germany.

"Yes, I found Germany an interesting study. They have but one idea and that, work. Everybody works. I saw women making mortar for bricks, and doing all kinds of work that will tend to rebuild the industrial prestige that Germany lost by the war."

Golf!

Medical Championship of the South.

To be held at Hot Springs, Arkansas, during the Southern Medical Association meeting in November.

A. Championship of the South—18 holes low medal score.

B. Handicap championship: All players are requested to obtain their handicap from home club and present it with par score for home course. Play for handicap championship will be at the same time as the championship round.

If it is possible, four-men teams from various clubs or cities will decide the Southern team championship.

Entries are requested at earliest moment.

E. R. Smith, Chairman, Dugan-Stuart Bldg., Hot Springs, Ark.

Dr. O. L. Miller announces the removal of his office from Atlanta, Ga. to Gastonia, N. C.

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Reasonable rates and Food of Quality.

HOTEL RICHMOND REALTY CORP.
W. E. HOCKETT, MANAGER
RICHMOND, VA.

Contamination of the Hands and Other Objects in the Spread of Contagious Diseases.

As the result of a study of this subject in the Durand Hospital of the John McCormick Institute for Infectious Diseases, William J. Matousek, Chicago (Journal A. M. A., May 28, 1921), reached these conclusions: The pathogenic bacteria present in the secretions of diphtheria and scarlet fever may be cultivated from the surroundings of the patients, but in the former disease less often than in the latter. Improperly sterilized eating utensils may readily serve as carriers of infectious material. The thorough washing of the hands with soap and warm running water efficiently removes the secretions with which the hands may become contaminated. To facilitate this, the skin of the hands and nails requires special care in order to insure a smooth healthy surface and freedom from any local condition which may render thorough cleaning difficult or impossible. Gauze masks protect the faces of the nurses from gross contamination with particles of air-borne secretions. Cultures from the hands of attendants are a useful check on the individual technic of those caring for contagious diseases. Cultural studies of the surroundings of patients with contagious diseases may serve to indicate the efficiency of the technic employed, and if applied at intervals they seem to stimulate attendants to greater efforts toward perfection.

THE MAGIC TOUCH.

(By Rhoda Hero Dunn.)

The summer night was soft upon the land;
Dim shadows of the hills outlined the sky;
And from the wood a dove's unanswered cry
Uprose against Orion's shining band.
We walked in silence but each other scanned
With friendly thought and sympathetic eye;
Until, a rougher place to help me by,
I felt upon mine own thy stronger hand.
Was it the magic of the night on me?
The open fields? The quiet stars above?
That strangeness of the solitude with thee?
Or that far calling of the mating dove?
Or was it from the first ordained to be
That friendship at a touch should change to love!

Pond's Extract

The efficiency of POND'S EXTRACT in relieving the acute discomfort and pain of Tonsillitis is evident from its initial use. Used as a gargle every hour—a tablespoonful to a half glass of hot water—it promptly controls the local inflammatory process and thus enables the tissues to restore normal conditions.

POND'S EXTRACT CO., New York and London

Tonsillitis

Vapo-Cresolene

For Forty Years

Vaporized Cresolene

has held its position as a valuable remedy for certain bronchial diseases of childhood.

It is particularly useful in the treatment of the very young.

Cresolene is indicated in Whooping Cough, Spasmodic Croup, Bronchitis, Asthma, Broncho-pneumonia, Coughs and the bronchial complications incident to Scarlet Fever and Measles.

Vaporized Cresolene is destructive to Diphtheria bacilli and may be advantageously used in connection with the treatment of this disease.

Let us send you our descriptive and test booklet which gives liberal sample offer.

THE VAPO-CRESOLENE CO., 62 Cortlandt Street, NEW YORK, Leeming-Miles Building, Montreal, Canada

Smoking in Pulmonary Tuberculosis.

The circulatory stimulation of tobacco to some patients is decidedly advantageous says E. A. Duncan, El Paso, Tex. (Journal A. M. A., August 13, 1921). One patient stated that smoking caused his temperature to rise. Investigation verified his assertion. In habitual smokers tobacco increases pulse rate and, to a certain extent, the blood pressure. As a result of this circulatory stimulation, there occurs an increase in the movement of the blood which is shared by the pulmonary circulation. In this respect, the effect of smoking is analagous to that of exercise. It is obvious that this increased flow of blood through the lungs can only favor the access of toxins to the circulation, certainly undesirable if sufficient to cause a rise in temperature. It is also evident from the foregoing that smoking should be stopped by those patients with bloody expectoration or recurrent hemorrhages. This effect of tobacco does not occur in every individual. Some patients may smoke without ill effect; but in any case in which the question arises whether or not smoking is inadvisable, decision can be made only by observation of the effect of tobacco on that particular individual. In other words, the effect of smoking deserves investigation in every case.

Cows and Fish Versus Mosquitoes.

One anti-malaria experiment in the bayou region of Louisiana is sufficiently novel and important to deserve mention.

"The bayou is a sluggish stream carrying a good deal of vegetation and affording a favorite breeding place for the Anopheles. By the damming of a bayou and impounding the water for a stretch of several miles, a lake is formed. From this the vegetation is removed, and the top minnows are given their opportunity. The fish eat the mosquito eggs as fast as these are laid. Only one more obstacle is to be overcome. If the vegetation on the banks is permitted to grow freely, it forms a protected zone in which eggs may be deposited beyond the reach of the top minnows.

"In some way the grasses on the banks must be cleaned away if the breeding of the mosquitoes is to be prevented. To meet this need the strips along the bayou are turned into pasture land on which cattle are allowed to feed. The cows crop the grass close along the low banks and leave the larvae an easy prey to the eager minnows. Thus the natural appetites of minnow and cow work together for the protection of man. Moreover the dairy and beef industry is fostered in a region which needs diversification of agriculture. It is too early to say whether this experiment will be completely successful; the indications so far are encouraging."

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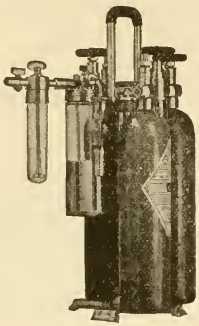

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the most practical'
the simplest
and the most economical,
the one which does not get out of order.
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and which is never discarded.

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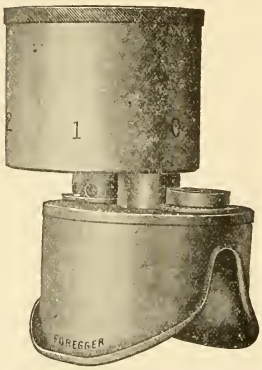

[*one half actual size*]
Open ready for use.

Practical, safe, economical and always ready. Used equally well with either Chloroform or Ether. No physician or obstetrician is ready for emergencies without a Townsend Inhaler always at hand.

MADE BY THE FOREGGER COMPANY, 47 WEST 42ND. STREET, NEW YORK.
Manufacturers of Anesthesia Apparatus Exclusively.

SOLD BY THE WINCHESTER SURGICAL SUPPLY CO., CHARLOTTE, N. C.
POWERS & ANDERSON, INC., RICHMOND, VA.

BACTERIA causing and complicating HAY FEVER, COLDS, CORYZA, ARYNGITIS, PHARYNGITIS, ADENITIS, OZENA, BRONCHITIS, ASTHMA, PLEURISY, PERTUSSIS, PNEUMONIA. TUBERCULOSIS develop the infection not only because they break down resistance but because resistance is inadequate to these bacteria during the inception of the infection.

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Indicated in Typhoid and other slow fevers. Dysentery, Chronic Diarrhœa and gastro-intestinal troubles.

Creosotonic (SCOTT)

THE IDEAL, SYSTEMIC ANTISEPTIC.
Invaluable in Tuberculosis, Bronchitis, Pneumonia, Asthma, Catarrh and as a tonic after all exhausting diseases.

Samples and Literature free on request.
The Dawson Pharmacal Company, Incorporated. Dawson Springs, Kentucky.

Wanted—Location for general practitioner (preferably in N. C.) Graduated in class A college. 2 years hospital, 1 year army, 3 years general and contract practice. Age 38, married.
T. H. CHESNUTT, Atkinson, Ga.

KISSES RUIN HEALTH(?)

Chicago, August 30.—Mrs. Lillian M. Cummings asked a divorce because her husband was such a persistent kisser. "When we were married I weighed 145 pounds and was a healthy woman," she said. "Night after night he'd come home and do nothing but smother me with kisses. My health commenced to fail and the physician told me I would soon suffer a nervous breakdown unless I left my husband. Now I weigh only 101 pounds." Mr. Cummings stands six feet tall and weighs 190 pounds.

When Iodine Is Indicated
use
Burnham's Soluble Iodine
and
thus assure the results you seek.

B. S. I. can be used in adequate dosage, over long periods, without gastric disturbance,
or other disagreeable effect.
A preparation that offers remarkable possibilities in the treatment of many intractable diseases. If you have some case that bothers you, our medical adviser will be glad to outline what you may accomplish with B. S. I.

Burnham Soluble Iodine Co.
Auburndale, Mass.

Campho-Phenique
ANTISEPTICS

The Treatment of Infected Wounds.

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An Agent of the utmost service in securing antisepsis and promoting healing. Such wounds should be thoroughly irrgated or swabbed out with CAMPHO-PHENIQUE, following bandage with gauze saturated with this solution, should be used as a dressing. Suppuration is checked and a healthy surface makes cicatrization much more prompt. An advantage of CAMPHO-PHENIQUE in these infected wounds is the continous germicidal action it exerts. Used as a routine dressing in all wounds or injuries CAMPHO-PHENIQUE, by reason of its positive germicidal properties, guard against infection and hastens healing.

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The Sluggish Bowel

Constipation in most instances is due to atonicity of the muscular structures and deficiency of the secretions. To restore tone to the intestinal muscles and increase glandular activity, there is no remedy so generally satisfactory as

PRUNOIDS

Unlike the great majority of laxatives, Prunoids never give rise to griping, nausea, or reactionary constipation. Their whole effect is gentle and pleasant because entirely physiological.

Cardiac Debility

When other cardiac remedies have proven unsatisfactory, the weak, irregular or extremely rapid heart will be promptly steadied, strengthened and slowed by the systematic use of

CACTINA PILLETS

The pronounced relief thus afforded cardiac patients unquestionably accounts for the fact that Cactina Pillets is more extensively employed by medical men to-day than any other heart tonic.

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"Neuralgia and Neuritis"

says a well- known physician, "are merely the 'cry of the nerves' for tonic treatment and better nutrition."

Countless medical men have learned that there is no therapeutic agent that will "answer" this "cry" more promptly and satisfactory than

Gray's Glycerine Tonic Comp.

Used in two to four teaspoonful doses, three or four times a day it

1. *Raises the quality of the blood.*
2. *Improves bodily nutrition.*
3. *Overcomes nervous exhaustion.*
4. *Relieves irritability and pain of the nerves.*
5. *Imparts resisting and staying power to the nervous system.*
6. *Restores the vitality and strength of the whole body.*

Often, therefore, when all other remedies fail to control neuralgia or neuritis, Gray's Glycerine Tonic Comp will afford prompt and permanent relief.

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135 Christopher Street, New York

JURY OUGHT TO KNOW MEDICINE

Portland Jurist Says That Would Help Dispensation of Justice.

(By H. T. Hopkins, International News Service Staff Correspondent.)
(The Charlotte News.)

Portland, Ore., Aug. 15.—What professional man makes the best jurist?

"A lawyer," might be expected to be the usual response.

But that isn't the way George Rossman answers that question. Here's his reply:

"A doctor."

No, Rossman isn't a doctor; he's municipal judge of Portland, and before he went on the bench he was a lawyer.

But his experience as a jurist has convinced him that a knowledge of medicine is more important in dispensing justice than is an acquaintance with Blackstone.

Four-fifths of the law breakers who appear in police court are deficient, mentally or physically, according to Rossman, and should be treated by physicians instead of being thrown in jail.

"The people who fall into the hands of the law," he said, "are abnormal people. They cannot live as their fellows. They steal. They use dope. They are quarrelsome. They drink, fight with their neighbors or allow their vile passions to rule them.

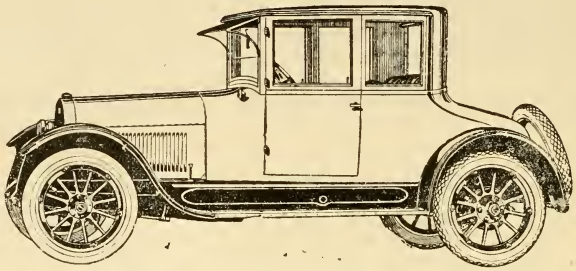
"These people are subjects for physicians rather than judges. Penalizing these unfortunates by locking them in jail does little good. It has a deterrent effect on the rest of society. But it accomplishes no reform in the prisoner.

"Take the woman dope fiend who came into my court. An examination showed she was suffering with a cancer and took the dope to deaden the pain. A term in jail would not cure her cancer. Medical science might do something for her, but statutes and ordinances would not.

"I do not believe in the present slipshod method of administering justice. A judge should not be required to spend all of his time listening to rules of evidence, to precedents and recent decisions.

"If I had my way I'd never send a man to jail until I had made a thorough examination of his case. I'd insist on a mental and physical examination of the prisoner. I would like to be a physician myself in order that I could discover the reason why the prisoner could not live like his fellow man.

"I believe the time is coming when the physician, and not the judge and jury, will deal with the law-breaker."



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Discover New Anesthetic.

Discovery of a new local anesthetic to be used as a substitute for cocaine, in anesthesia, was recently announced by the University of Illinois, in whose laboratories the work was accomplished.

A further announcement to the medical profession is now made by the Abbott Laboratories, of Chicago, that this new anesthetic will be supplied by them and will be known as Butyn.

This new product is structurally related to both cocaine and procaine, but clinical tests have shown it to be superior to cocaine in practically every respect. For example, it is more effective and less toxic; its solutions may be boiled without decomposition; it causes no dilation of the pupil of the eye, nor drying up of its secretions. It is less irritant than cocaine and much more rapid in its action. The anesthesia produced by Butyn is of longer duration and its solutions are slightly antiseptic.

No Harrison narcotic blank is required in securing Butyn, as it is without the habit-forming disadvantages of cocaine.

Clinical work done by Dr. Geo. F. Suker and Dr. H. S. Gradle, of Chicago, prove this new anesthetic useful as a substitute for cocaine. A two per cent aqueous solution instilled into the eye will produce anesthesia so rapidly that operative work can commence at once, whereas from four to five minutes was formerly required where cocaine was used.

It is expected that this new discovery will soon be available for the profession. Further information may be obtained by writing to Research Department of the Abbott Laboratories, who have collaborated with the University of Illinois in deveoping this new anesthetic.

Stamping Out Malaria—Proper ditching and draining and the introduction of surface minnows into the waters of the eastern part of the State has practically wiped out malaria in this section, according to information sent to the board of health by two workers sent to the State by the International Health Board. One of these workers has been making an investigation of conditions in Lenoir County, since that is considered a typical eastern county, neither better nor worse than the others in that section so far as the malaria situation is concerned. The campaign against the malaria carrying mosquito has been going on in Lenoir for the past two years, and the results are in evidence today. The International Health Board man has reported to Dr. Rankin that so far he has been unable to find a single case of malignant malaria. Another worker making an investigation of the malarial situation in another eastern county, has also reported that he has not been able to find much evidence of this disease.

Vapo-Cresolene

Diptheria bacilli, planted on blood serum, in Petri dishes moistened with sterilized water, were freely exposed to the air in an enclosed space of 119 cubic feet, regulated to body heat. At the end of twenty-six hours exposure to the vapor of Cresolene there was no growth evident on the serum. Smears from the latter on other specimens of serum failed to give any growth.

A second experiment was made to verify the first, the time of exposure being sixteen hours instead of twenty-six hours, with the same results as above.

From tests made by C. J. Bartlett, M.D., Prof. Path., to determine the germicidal value of vaporized Creosolene.

Vaporized Cresolene is to-day probably the most widely used treatment for Whooping Cough and Spasmodic Croup. It is indicated where it is desired to relieve cough; for the bronchial complications of Measles and Scarlet Fever, and for its prophylactic effect.

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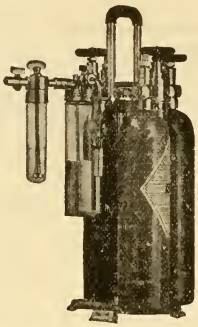

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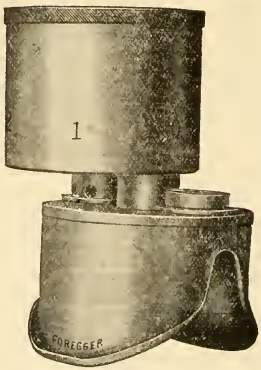

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The Sluggish Bowel

Constipation in most instances is due to atonicity of the muscular structures and deficiency of the secretions. To restore tone to the intestinal muscles and increase glandular activity, there is no remedy so generally satisfactory as

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Unlike the great majority of laxatives, Prunoids never give rise to griping, nausea, or reactionary constipation. Their whole effect is gentle and pleasant because entirely physiological.

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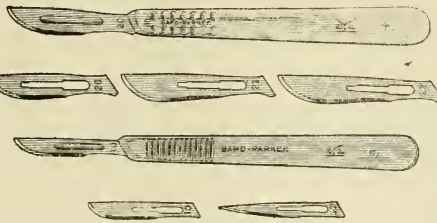

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The next annual meeting of the Tri-State Medical Association will be held in Norfolk, Va., February, 1922.

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9th District—Dr. M. R. Adams, Statesville.
10th District—Dr. Eugene R. Glenn, Asheville.

Committees Elected

Scientific Work—Dr. F. J. Wood, Wilmington; Dr. Richard N. Duffy, Newbern; Dr. C. A. Shore, Raleigh.
Publication—Dr. P. P. McCain, Sanatorium; Dr. C. A. Julian, Thomasville; Dr. W. L. Dunn, Asheville.
Obituaries—Dr. E. G. Moore, Elm City; Dr. Arch. Cheatham, Durham; Dr. H. H. Briggs, Asheville.
Public Policy and Legislation—Dr. John B. Wright, Raleigh; Dr. J. M. Parrott, Kinston; Dr Cyrus Thompson, Jacksonville.
Finance—Dr. J. W. Long, Greensboro; Dr. E. S. Bulluck, Wilmington; Dr. E. B. Glenn, Asheville.

Delegates

To American Medical Association—(Elected in 1920 for a term of two years) Dr. Jno Q. Myers, Charlotte; Dr. J. F. Highsmith, Fayetteville (2 years).
To the Virginia Medical Society—Dr. W. C. Willis, Rocky Mount; Dr. C. V. Reynolds, Asheville; Dr. J. B. Bullitt, Chapel Hill; Dr. G. Grady Dixon, Ayden.
To the South Carolina Medical Association—Dr. W. F. Hargrave, Kinston; Dr. A. S. Root, Raleigh; Dr. L. A. Garrison, Gastonia; Dr. R. V. Brawley, Salisbury; Dr. John W. McConnell, Davidson.

The next annual meeting of the North Carolina Medical Society will be held in Winston-Salem, April, 1922.

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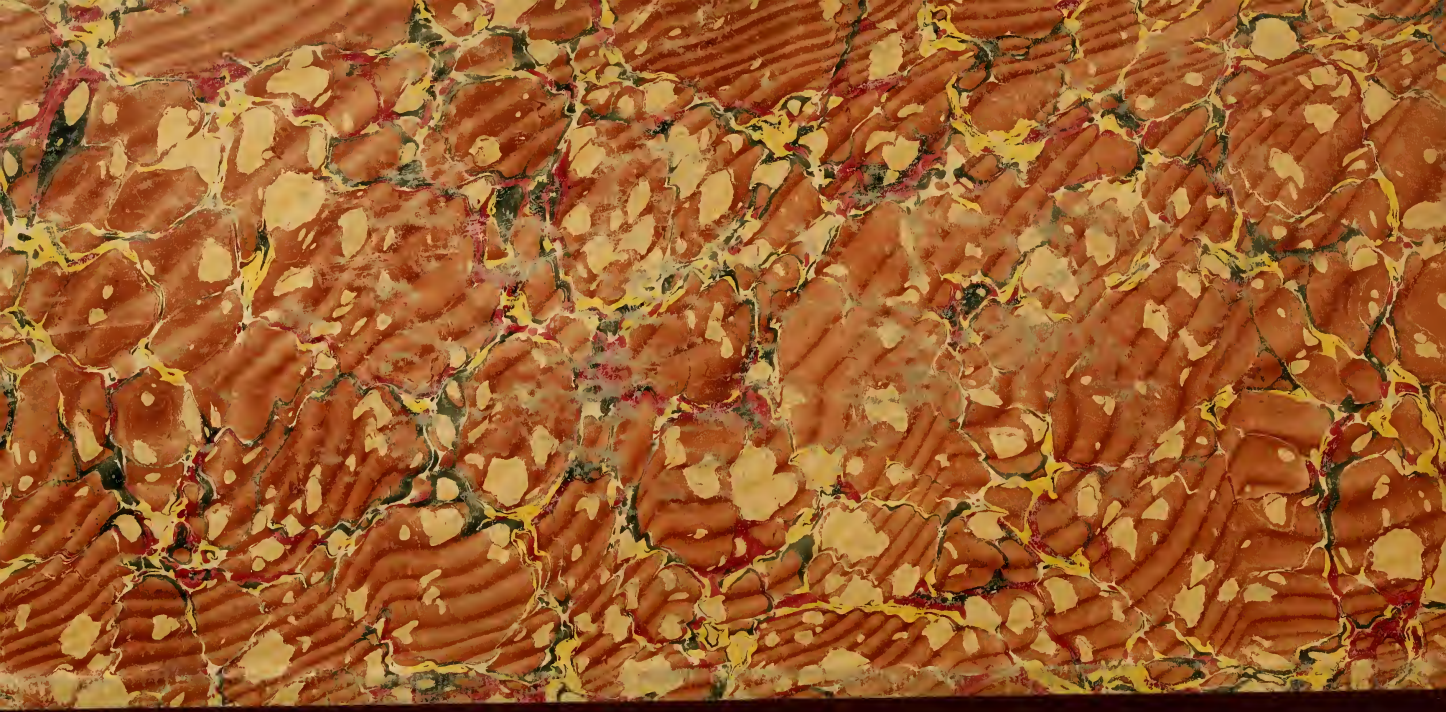
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